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# MEDICAL REPOSITORY,

FOR

FEBRUARY, MARCH, AND APRIL, 1804.

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## ARTICLE I.

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CASE of RUPTURE of the UTERUS: Communicated by  
THOMAS C. JAMES, M. D. of Philadelphia, to Dr. MIL-  
LER.

ON the 18th of February, in the afternoon, I was desired, by a respectable gentleman of this city, to visit his wife, who was the mother of several children, and then in labour, attended by a midwife. The history of her case, as far as he was acquainted with it, he briefly related to me.

It appears from the account of the midwife, that labour-pains had come on the preceding morning, and she was called about two o'clock, A. M. The head presenting, the membranes ruptured, and the waters were discharged about seven o'clock, and the labour appeared to advance regularly, and with sufficient rapidity, until about nine o'clock, A. M. at which period the os uteri was considerably dilated, and the head so far engaged in the pelvis as to afford a prospect of the labour being terminated in ten or twelve succeeding pains; when, upon her sitting up in the bed, and making some exertion, she complained of a sudden pain, and sensation of fainting, appeared to be considerably agitated and tremulous, and said that "the child had gone back again." Upon the midwife's examining again, she could distinguish no presenting part of the infant; and, being much alarmed, Dr. Shippen was sent for, who, upon a common examination per vaginam, could reach no part of the child. Being obliged to leave her to attend another lady, he recommended to the husband to call upon me.

It was between four and five o'clock P. M. before I could attend, when I found her in a state of considerable anxiety, with quick and laborious respiration, restlessness, thirst, and vomiting of every thing she drank, with great flatulency.

She had experienced no labour-pains, as I was assured, after nine o'clock in the morning; since which time she had taken about fifty drops of tincture of opium. Upon examination, I found the history which had been given of the state of the parts perfectly correct; and could distinguish nothing beyond the os uteri, which was completely relaxed and dilated, except what felt to me like coagula of blood, or loose membranes receding from my finger: there was a small discharge of blood from the vagina, but not more than she had been accustomed to in her former labours.

At ten o'clock at night I again visited her, and found her much in the same state in which I had left her. She had been sensible of some relief from some medicine which had been prescribed, but had felt no return of labour-pains.

Being under the necessity of leaving her, I could not see her again until six o'clock the next morning; and found that she had been distressed with incessant vomiting and extreme difficulty of respiration through the night. Her countenance expressed great anxiety, and her pulse had sunk considerably. She had, indeed, felt three attacks of pain in the abdomen, which, she said, seemed more like cramp or spasm than regular labour-pain; and she complained exceedingly of pain at "the pit of the stomach," feeling, as she expressed it, "as if there were a knot there." I thought, upon laying my hand upon the abdomen, which was extremely large and pendulous, that I could distinguish the limbs of the child more plainly than in any case that had ever occurred to me, notwithstanding her being extremely corpulent.

Reflecting upon her situation, I had very little reason to doubt that a rupture of the uterus had taken place, and felt the necessity of proceeding to deliver her as soon as I possibly could. At the same time wishing for a consultation with some of my medical brethren, I endeavoured to procure a meeting with Dr. Shippen, but his servant did not deliver my message to the Doctor, as he had been up the greatest part of the night with the patient before alluded to. I then proceeded, as the case became more urgent from her increasing debility, (although the discharge of blood from the vagina was still trifling) to introduce my hand, with the intention of turning the child, and delivering by the feet.

The first thing distinguishable by my fingers, upon the introduction of my hand through the os uteri, were some coagula of blood; but my elbow had passed considerably into the vagina before I could reach any part of the child. My



fingers then pressing against the os frontis of the infant, by great exertion I introduced them into its mouth, and pulled it towards me, by which means, together with the assistance of the midwife, whom I directed to press on the abdomen, I was enabled to reach one of the feet, which I brought down and passed a noose over; but found it necessary to bring down the other before I could extract the child.

Some difficulty took place in bringing down the arms, and at the shoulders; but she was ultimately delivered of a very large child, which, from the abrasions of the cuticle, and other appearances, must have been dead for some time. The placenta immediately followed, which was small and flaccid.

In the course of the operation, I found that my hand was in the abdomen, surrounded by the intestines; a sensation which can be more easily conceived than expressed. No contraction of the uterus could be felt to take place, neither did my fingers or hand seem to come in contact with the parietes of the uterus through the whole delivery.

The patient, during the operation, and after I had brought the feet down, observed that she had not felt as much pain as she had expected to suffer. After the delivery of the child and placenta, I again introduced my hand, as the abdomen still continued very large and distended, to determine whether there was another child; and was then more accurately ascertained that an extensive laceration of the uterus had taken place, and could feel the intestines between my fingers and thumb, which, however, I did with great caution.

But what rendered my situation particularly embarrassing, was the reflection that all I was doing could not avail to saving the life of the unfortunate patient; and of this afflicting prospect I thought it proper and necessary to convey the intimation to the husband. She accordingly died immediately after delivery, and before the arrival of either of the practitioners who had been sent for.

On the 20th, in the morning, having obtained permission to examine the body of the patient, Drs. Shippen, Church and Hewson attended with me for that purpose: and the first appearance that took our attention was the immense tumour of the abdomen, which appeared to be nearly, if not fully, as large as before delivery; so that it seemed there might be still another child, although, from the examination at the time of delivery, I was convinced that this could not be the case. The circumference of the tumour, measured by a string, from

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ilium to ilium, was nearly three feet, and from the scrobiculus cordis to the pubes about the same distance.

Upon making an incision through the parietes of the abdomen, at the umbilicus, we found that this immense tumour was occasioned by flatus of a very putrid odour, upon the escape of which the distention subsided very completely. We accordingly proceeded to carry the incision from the umbilicus to the ilium on each side, by which the contents of the abdomen were brought into view, and the stomach and intestines were found considerably distended with air.

It is unnecessary to state appearances which are not immediately connected with our subject: suffice it, therefore, to say, that after removing upwards of three pints of blood and water, which had been extravasated among the intestines, we found the uterus nearly completely contracted, and uninjured on its anterior surface; but upon examining the posterior portion of the cervix, a laceration or rupture was observed, extending through the whole of its course, where it had lain in contact with the last lumbar vertebra, and the projecting part of the sacrum; and upon more particular examination afterwards, it appeared that the os uteri was almost entirely obliterated, from the distention of the parts that had taken place. The lacerated part had that livid appearance which usually accompanies gangrene, and there were several portions of coagulated blood and membrane, which adhered very firmly to the superior part of the ruptured cervix. All the other parts of the uterus were apparently in a natural state. Upon cutting through its fundus, it was nearly two inches thick, and the orifices of the large veins or sinuses, as they have been called, were sufficiently patulous to admit a large probe for a considerable distance.

After having thus, in a concise way, related the case, I shall take the liberty of stating a few reflections, which have suggested themselves to me on the occasion.

It is most probable that the rupture occurred at the period when the patient made the effort to rise out of bed, and when she exclaimed that the child had "gone back again." And it is likely that it took place partly in consequence of some irregular motion of the patient, combined with the strong action of the uterus at that time, determined forcibly to a part predisposed to laceration by the compression it suffered between the head of the child on one side, and the projection of the sacrum and lumbar vertebra on the other; perhaps, also, a

severe fall that the patient had met with, some time previously to parturition, might have had an unfavourable effect on the part, and tended to occasion the fatal event of the case.

The child, at the time of the rupture, was most probably thrown, by the contracting uterus, completely into the cavity of the abdomen (the uterus at the same time being pressed forward towards the pubes); and it is not unlikely that the placenta was very soon afterwards detached and expelled into the abdominal cavity; as, when it was extracted, it bore every mark of having been separated from its adhesion to the uterus for some time.

It appears that, in the case of ruptured uterus, the celebrated Dr. William Hunter, to whom the science of midwifery is so much indebted for its present state of improvement, did not recommend any efforts to be made to save the woman or child. He considered the situation of the mother as desperate, and that any exertions made by the practitioner to relieve her, would only tend to aggravate her distress, without affording a chance of preserving her life. And this appears to have been also the opinion of Dr. Denman, as is to be presumed from his conduct in a case which he has himself related. Indeed, it was the general decision of practitioners in Great-Britain, as may be collected from their writings, until, from a case which occurred to Dr. Douglass, of London, in the year 1784, and which terminated successfully for the mother, they were induced to alter their opinion.

In this case, which the Doctor has very circumstantially related, the child and placenta were both completely propelled into the abdominal cavity. He also introduced his hand and arm, turned the child, and brought it away by the feet. The placenta had so adhered to the intestines that he was obliged to separate it: the woman nevertheless recovered.

Notwithstanding this, we find Baudelocque, in his "*Art des Accouchements*," doubting whether a woman had ever been delivered *per vaginam* under such circumstances; as he supposes the contraction of the uterus round the lacerated part would prevent the extraction of the child. He says, "Those who have gone up in search of the infant, when entirely in the abdominal cavity, and who have extracted it by the natural passage, some hours after the period at which the rupture took place, have, doubtless, taken the rupture of the vagina for that of the cervix of the uterus; for the thing (he adds) is only practicable in the former case." Where the rupture of the cervix only has taken place, he recommends gastrotomy,

or an incision through the parietes of the abdomen. But in the case which occurred to Dr. Douglass, he expressly says, that the uterus seems to have been ruptured transversely on the lower and fore part, some distance above where the vagina is connected with it; yet he extracted the child by the natural passage.

Several other cases are related by practitioners of experience, where the child has been extracted by the feet through the rupture of the cervix, or the body of the uterus itself, where the vagina has remained unlacerated.

And in the melancholy case which I have just related as falling under my own particular notice, although some part of the vagina was lacerated, yet the greatest extent of the rupture was evidently in the cervix uteri, and through this the child was delivered. I think, therefore, we are authorized to lay it down as a general rule, first, to make the attempt to extract the child through the laceration, before we determine on performing the operation of gastrotomy, if it should ever be proposed.

The symptoms of ruptured uterus have been detailed with sufficient precision by most of the writers on midwifery: we shall, therefore, only observe, that sometimes the head has been so jammed in the pelvis, forming what the French have denominated a case of *enclavement*, that although, from other circumstances, we may with certainty determine that the rupture has taken place, yet the presenting part does not recede.

Upon the whole, we may safely conclude, that although a rupture of the uterus is not necessarily and inevitably fatal, though generally so, it is the most correct practice, where we are convinced that it has taken place, to proceed immediately either to the extraction of the child by the forceps, where the head is within their proper grasp, and nothing forbids; or to introduce the hand, turn the child, and deliver by the feet, where the case is similar to the one I have ventured to relate.

There may, possibly, some cases have occurred, where it may have become necessary to perform the operation of gastrotomy, or section of the parietes of the abdomen, as advised by Baudelocque, and to extract the child through the incision; but the necessity of this distressing expedient must be rare indeed: may it never occur to any practitioner in this country!



## ARTICLE II.

OBSERVATIONS on the WEATHER and DISEASES at LONDONDERRY, in IRELAND, in the Year 1800: Communicated by WILLIAM PATTERSON, M. D. to Dr. MILLER.

*Tabular View of Various Phenomena.*

MONTHS.	Prevalent Winds.	Fair Days.	Showery.	Wet.	Hail.	Snow.	Frost.	Thunder and Lightning.	
January	S. E.	14	12	16	3	1	7	9	0
February	S. E.	19	18	10	0	2	3	10	0
March	S. E.	17	18	13	0	0	3	7	0
April	W.	15	4	21	5	2	0	0	1
May	N. W.	7	9	20	2	2	0	0	3
June	N. W.	14	8	20	2	1	0	0	1
July	W.	23	17	14	0	0	0	0	1
August	W.	17	15	16	0	0	0	0	0
September	W.	7	10	16	4	3	0	0	4
October	N. W.	17	6	22	3	2	0	0	0
November	N. W.	23	4	23	3	2	4	5	0
December	W.	12	15	16	0	2	3	18	0
Total	W.	74	136	207	22	17	20	49	10

*Barometer, Thermometer, Hygrometer, and Rain-Gauge.*

## SUMMARY.

Maximum of the barometer 30. 49, the 25th July; thermometer 74 1-2 deg. hygrometer 36 deg. Minimum of the barometer 28. 85, the 23d January; thermometer 43 1-2 deg. hygrometer 47 3-4 deg.—Maximum of the thermometer 81 deg. the 26th July; wind south, easy breeze, fair and bright; barometer 30. 32; hygrometer 35 1-2 deg. Minimum of the thermometer 28 deg. the 9th December; wind east, easy breeze, fair, frost and fog; barometer 29. 59; hygrometer 50 3-4 deg.—Maximum of the hygrometer 52 1-6 deg. the 25th December; barometer 29. 35; thermometer 38 deg. Minimum of the hygrometer 33 1-3, the 10th August; barometer 30. 10; thermometer 77 deg.

Annual mean of the barometer 29. 82. Annual mean of the thermometer 49 deg. 75. Annual mean of the hygrometer 42 deg. 19. Annual quantity of rain 29 inches—2,263,628 parts.

*General Remarks.*

In *January* there was much blowing weather, sometimes with the wind from the south, but chiefly from the south-east, and often accompanied with snow, of which description have been our severest winter storms for some years past. In this month also occurred smart congelation, and mostly with a low barometer. *February* was a remarkably dry month: the winds were, in general, moderate: and although there was frequent congelation, the cold was seldom severe. Sometimes, indeed, the temperature of the air was almost genially warm, even after sun-set, whilst the preceding day had been, perhaps, rather sharp, which was often the case in the cold east and south-east breezes of the whole winter. Though there were some days and nights of congelation in *March*, yet there were but two or three in any degree sharp, and one only so hard as to prevent harrowing in the morning. This, like the preceding month, was remarkably dry; but there were frequent mists, and some thick fogs, which condensed into drops resembling rain. The winds were generally moderate, often calm, and sometimes in different currents, the upper current being south-west, whilst the lower was south-east, tides of the atmosphere which were frequently noticed during this and the two preceding months. *April* was a wet month, with much blowing, squally weather from the south and west points, whilst the temperature of the air was generally moderate. The day (22d) on which the thunder and lightning occurred, a very heavy hail shower fell. The temperature of the air in *May* was generally cold, with a good deal of blowing weather, and frequent showers; to the frequency of which the quantity of rain that fell did not bear any proportion. In *June* the weather was generally cold; only two or three days that could be called genially warm; and on the night of the 10th a degree of refrigeration took place, which stiffened the cloth on the bleach-fields. The winds in *July* were principally moderate, and the air dry, commonly hot, sometimes sultry. Though there are several showery days noted in *August*, yet the rain was, upon the whole, so inconsiderable, that there was a great scarcity of water for steeping the flax. From the 15th of July to the 12th of this month, the weather, with little interruption, was very hot; and the temperature of the air, in the rest of these two months, was, in its general character, rather warm, with winds, for the most part, very moderate in their forces. The summer altogether was the

hottest in the memory of the oldest person living; and since I began making observations, that is for sixteen or seventeen years past, the mercury in the thermometer never before ascended so high on the scale. *September* was, in general, a boisterous month, having several squally gales, the greatest from the north-west, always accompanied with rain, and sometimes with hail, and thunder and lightning. *October*, like the most of *September*, was a blustry, wet month, and the severest weather was at night. *November* commenced with a storm from north-west, the direction of wind which prevailed, in a blustry east, accompanied with heavy showers, the whole month, and the rain occurred principally in the night, as it did from the middle of *September*. There was some hazy weather, together with some thick fogs, which condensed into drops resembling rain from clouds. On the 25th, after a shower of round snow, about eight o'clock at night, a very sudden and sharp frigorific process took place, which, before returning day-light, was succeeded by rain. In the beginning and latter part of *December* several terms of congelation prevailed, some of them keen, but generally moderate; a good deal of hazy and foggy weather; and, in the middle of the month, the air was warm and mellow, producing in the grass-fields a remarkable verdure. The force of the winds was mostly moderate, sometimes easy, and when fresh breezes occurred they were chiefly in spurts.

The annual sum of the winds from each point was, N. 41, S. 27, E. 21, W. 136, N. E. 27, S. E. 75, N. W. 79, S. W. 36.

## DISEASES.

### *Irritative Fever.*

An ailment of this description appeared in spring, chiefly in the months of March and April, and was of a very mild nature. It was characterized by head-ache, moderate chills, slight soreness in the throat, fluctuating pains, impaired appetite, and an eruption, the second or third day, about the nostrils and upper lip. The tongue was but little furred, the heat of the skin not much increased, and the pulse from 92 to 110. In general there was not any cough; but in a few instances, on the decrease of fever, there occurred a superficial tickling cough, of little consequence and short duration. The subjects of this disease were mostly children, from four to twelve



years old, and women; considerably more of the former than of the latter; and its continuance was from thirty-six hours to seven days.

The remedies were, purges of calomel and jalap, oleum ricini, aq. ammon. acetat. tart. antimon. mucil. arab. and, in the case of adults, small doses of tinctura opii. In the younger class of patients, a single dose of calomel and jalap had quick curative effects. In the older class, some tonic bitters were requisite to revive the suspended digestive functions.

#### *Peripneumonia.*

In spring likewise some pulmonic complaints took place; but in this neighbourhood they were not severe nor fatal. Eight or ten miles, however, west of Derry, in the vicinity of a considerable estuary, called Lough Swilly, they were more violent, and often mortal. With us the disease submitted to easy measures: one moderate venesection, a blister, some laxatives, mild antimonials, neutrals, dilution, and vegetable aliment, were sufficient; and under this treatment most cases terminated favourably in the space of a week.

#### *Small-Pox.*

What season of the year this distemper arose is uncertain; but in summer and winter it prevailed most, and was fatal in many cases. The principal note of distinction between its disposition this year, and its general character, was, that patients fell victims to it, whose situation did not appear actually hazardous until it became really incurable, though the pustules partook more of the distinct than confluent species. Perhaps the catastrophe would not have been so unhappy had medical aid been requested earlier, or requested at all: for the generality of the families wherein the disorder reigned were of the lowest and poorest orders, whose notions are unfavourable to the use of remedies in the small-pox, considering that, in the distinct kind, medicine is unnecessary, and, in the confluent, that it is universally fruitless. The children of the less indigent and less prejudiced, as well as those of the ascending ranks, are, in general, secured by inoculation.

#### *Typhus Mitior, or Simple Inirritative Fever of Darwin.*

A fever of this type appeared in autumn, continued during winter, and stretched to the beginning of spring. Its introductory symptoms were head-ache, chilliness, and other circumstances belonging to pyrexia. In the first stage, particu-

larly where the patient strove to sit out of bed, an irksome formication was almost continually present. The tongue was generally moist, and but slightly covered with mucus throughout the disease; thirst variable; skin for the most part temperate, seldom hot: pulse from 92 to 125, more frequently bold than timid; and the bodily strength was not greatly reduced.

The general subjects of this febrile malady were females, some of whom were annoyed by great stomachic debility, and frequent faintishness. The febrile action began to decline from the 11th to the 16th day, as indicated by the subsidence of the pulse constantly occurring on these occasions. In winter great caution was found requisite with regard to going first into the open air, as precipitancy herein exposed the convalescent to relapse, which, in one case, (that of a medical friend) turned out rather severe.

By watching the approaches of the disease, its progress was sometimes stopped by the administration of an antimonial emetic. In confirmed cases, the articles attended with the most remedial effects were, neutralized ammonia, moderate purges, either of calomel and jalap, or of crystals of tartar, small doses of antimonials, *sp. ætheris vitriol.* gentle doses of *tinct. opii*, wine, diluted or pure, in moderate quantities, with vegetable diluents and nutriment. Cinchona, even when it agreed with the stomach, did not possess advantages superior to *rad. columbæ*, infusions of which were found very beneficial, especially in those cases wherein the stomach was materially engaged. The introduction of fresh air into the chambers of the sick, and cleanliness in every circumstance, were studiously pursued.

#### *Miscellaneous Notices.*

Rheumatic affections, pains in the bowels, and diarrhœa, were sporadic in autumn, winter, and part of the succeeding spring. A few of the rheumatic and bowel cases were rigorous, but those of diarrhœa were generally temperate. The remedies usually serviceable in such cases were employed, and seldom failed answering the purpose.

The measles appeared in November, prevailed in January and February, 1801, and did not retire till the month of April following. The species of the disorder was the *rubeola vulgaris* of Cullen and Sauvages, the *morbilli regulares* of Sydenham, and the *rubeola irritata* of Darwin; consequently it was of a very mild nature, and required only simple remedies, with corresponding rules in respect to the various modifications

of regimen. In the midst, indeed, of the morbillous constitution, a catarrhal ailment seized several children, which, at first, was liable to be mistaken for the invasion of the rubeola, but was soon distinguished from this complaint, and one of its discriminating marks was its yielding to a purge, and other antiphlogistic measures, in the course of from 24 to 48 hours.

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### ARTICLE III.

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*To the Editors of the Medical Repository.*

**CORRECTION of Dr. CHISHOLM'S MISTATEMENT respecting the PREVALENCE of the MALIGNANT FEVER at St. THOMAS's, by J. F. ECKARD, Esq. Danish Vice-Consul at Philadelphia, in a Letter to JAMES MEASE, M. D. of Philadelphia.**

SIR,

**I**N one of a series of numbers republished last autumn, in a newspaper of this city, from a New-York gazette, respecting the origin of the epidemic fever which has often afflicted various parts of the United States since 1793, I observed some extracts from a medical work, referring to the prevalence of the malignant pestilential fever in the island of St. Thomas, which forcibly drew my attention, as they evidently referred to events, some of which had happened under my own eye, and some, indeed, in my own house. Knowing the statement to be very inaccurate, I was induced to inquire into the authority by which they were originally made public, and was informed by you that it was Dr. C. Chisholm. This physician, in his *Essay on the Malignant Pestilential Fever introduced into the West-India Islands from Boullam, in 1793, 1794, 1795, and 1796*, second edition, Lond. 1801, has laboured to prove, that the fever which, during the above period, ravaged the West-Indies, was not the usual fever prevalent in the islands, but a new disease, and highly contagious; imported from Africa. With this opinion, however, I have no concern, nor am I anxious to support or disprove the opinion of the New-York writer, respecting the importation of the fever which prevailed in that city: but I owe it to truth, and to myself, to show the inaccuracy of Dr. Chisholm's statement: and I should not hazard my sentiments, in contradiction to a professional



man, if the cases of fever which he refers to had not occurred in my own house.

The following extract contains the statement upon which I intend to remark.

"When I visited this island (St. Thomas's), in November, 1796, an accident furnished me with an opportunity of informing myself relative to the history of the malignant pestilential fever as it appeared there in 1793, 1794, and 1795, and at that time. The history was indeed a melancholy, but it was an instructive one. An eminent merchant, Mr. C. G. Fleicker, with whom I had been acquainted at St. Croix, requested me to visit a valuable young German gentleman of his house, of the name of Schmalder, who had arrived from Hamburg only about ten days before, and at this time, unhappily, laboured under a fatal attack of this most dreadful malady. In Mr. Fleicker's house the malignant pestilential fever had very frequently made its appearance during and since 1793, and, except in one instance, (the Captain of a Hamburg ship) always fatally. *No means, at least none sufficient for the eradication of the infection, had been employed on the death of the unfortunate sick; consequently the chambers which were successively occupied by strangers from Europe, became a never-failing seminum of the pestilential contagion.*"\*

Dr. Chisholm, no doubt, alludes, in the above paragraph, to Mr. C. G. Fleischer, who resided at St. Thomas's, but who had not, at the period of Dr. Chisholm's visit, any regular establishment in the island, but acted as an assistant to my house, of which Mr. Schmalder was clerk. There being a great intimacy between Mr. Fleischer and myself, he often, in my absence, was authorized to superintend my concerns, and this was the case at the time Mr. Schmalder died. I was, however, at home when he arrived from Europe, and returned soon after his death.

More young men had died in my house, from 1793 to 1796, and even later, than, perhaps, in any other in the town; because more had come out to me from Europe than to other merchants. Their deaths, however, could not have been occasioned by the contagion remaining in the chambers of the house, as Dr. Chisholm supposes; for the cases took place at remote periods, in different houses, I having changed my dwelling in 1795. Neither could their deaths have been oc-

\* Vol. ii. p. 320.

casioned by the contagion remaining in the bedding; for the beds and bedding of those who died of a putrid fever in my house *were never used again*. Further, according to the best of my recollection, two persons were never ill of the fever, at any time, in the same chamber, in either of my houses, in both of which I had four or five rooms appropriated for clerks; besides, many persons slept in those chambers without inconvenience. If Dr. Chisholm's account were correct, my house must have been a *lazaretto*, for those supposed pestiferous chambers were almost always occupied; and I can assure him, that commonly a whole year, and sometimes a longer period, passed without any one of my family being sick of fever. It is, moreover, incorrect, that all those persons died who had been sick of the pestilential fever during and since 1793, except the *Hamburgh Captain*; and also, "that after the first two years of the introduction of this fever, the inhabitants, without exception, whether creoles or foreigners, equally suffered." The truth is, that many Europeans and Americans recovered, both before and after the time of Dr. Chisholm's visit to St. Thomas's, and the *fever never spread to the inhabitants at large, but was confined to persons recently arrived from northern climates, and to those on board the vessels in the harbour*; nor was there any apprehension of contagion except among the shipping. I never heard of a single instance of any person who had resided for some years in the island being afflicted with the malignant fever. A residence of nearly twenty years in the island enables me to speak positively as to this fact.

I have not the honour of Dr. Chisholm's personal acquaintance, but as he was so polite as to visit Mr. Schmalzer in my absence, I feel myself obliged to him, and I am sorry I have been under the necessity of correcting his mistatements. He mentions Mr. Jennings and Dr. Tucker as his acquaintances at St. Thomas's, and to these gentlemen, as well as to Mr. Fleischer, I refer for corroboration of any part of my statement, if required.

I am, Sir, respectfully,  
Yours, &c.

J. F. ECKARD.

*Philadelphia, Feb. 1, 1804.*

## ARTICLE IV.

*An ACCOUNT of an extraordinary CASE of BLIND PILES, radically cured by Compression and Dilatation of the Anus: Communicated in a Letter from Dr. —, of Maryland, to Dr. MILLER, dated February 22, 1804.*

DEAR SIR,

I HAVE long entertained an opinion, in some measure founded on experience, that every disease to which the human body is liable, has a remedy suited to its cure, provided the organs which are properly called vital, or other essential parts, have not sustained so much injury as to make recovery impossible. From this it will not follow I have taken up an idea that the healing art will ever attain to a state of perfection. Unfortunately, there is only one right way of healing a disease, though a great many wrong methods may be pursued to harass a patient, or, in other words, "*to kill by rule, or cure by chance.*" It may also be mentioned as a fact, that a patient will sometimes get well by the efforts of *nature*, the efforts of the doctor to the contrary notwithstanding. The following case will satisfy you that I do not pretend to exempt myself from this unhappy state of imperfection. I only wish to be understood, that cases every now and then occur in practice, which all the physicians and old women in the country think they have a perfect knowledge of, that can only be cured to the comfort and satisfaction of the afflicted patient in one way that can be called proper and right, though the physician or surgeon may have very implicitly followed the advice and directions of the most approved and celebrated authors!! Is there a candid physician in the world who will not confess he has treated certain cases in a very bungling manner, to the no small distress of his patient? But if, by chance or reflection, he has, after some time, hit on the proper method of cure, what exalted sensations! What internal satisfaction is communicated, on such an occasion, as well to his patient as himself!

I have been led to these reflections and observations from an extraordinary case of blind piles which came under my notice last spring.

I. M. aged 39 years, of sound constitution and athletic conformation of body, had been, ten years before, severely



afflicted with a spasmodic disease in his bowels, commonly called the *dry gripes*, but had entirely recovered, and remained so for that space of time, living a very active life, and enjoying almost an uninterrupted state of health, with this exception, that shortly after recovering from the disorder in his bowels, he was troubled with the bleeding piles, which were brought on by a costive habit of body, and somewhat increased by aloes, which were used to obviate that predisposition. He says, and there can be no doubt as to the truth of his report, for ten years he rarely had a discharge by stool which was not accompanied with blood in greater or smaller quantities (invariably without pain), whether procured by nature or art; but that his general health was seldom otherwise affected, except in one instance, about five years ago, of catarrhal fever, from which he soon recovered.

In March last, 1803, almost twelve months ago, the bleeding piles stopped, which were immediately succeeded by a smart fever, and uncommon painful sensations about the anus, and up the rectum, after stool; symptoms heretofore altogether unusual; which made it necessary to take blood from the arm two or three times in the course of as many days. Laxative medicines, such as sulphur and cream of tartar, and castor oil, were administered. Anodyne injections, as well as anodyne ointments, were advised, but all to little purpose, for scarcely momentary relief was afforded. For some time the stools were made frequent, with some hope that benefit would be obtained by such means; but instead of relief, the pains were aggravated after every stool, so that it soon became an object to procure them no oftener than was thought really necessary to obviate costiveness; for it was soon observed that every stool was accompanied with great pain in the discharge of fæces, which seemed rather to abate for half an hour, and after that to increase with aggravated violence, and continue for twelve hours. Observing a kind of habit established, which harassed him exceedingly, notwithstanding the means used to obviate pain, he would procure a stool by sulphur and crem. tart. or bals. copaiba, as inclination might direct, in 24 or 48 hours, but whether at one period or the other, the effects were invariably the same—that is, great pain in the discharge of fæces, aggravated in half an hour, and continued twelve hours regularly by the watch. Some respite from pain after this, though a great soreness about the anus and up the rectum remained, would have cheered the drooping spirits, had not the most dreadful anticipations constantly hung

on the mind. The imagination can scarcely picture a more distressing case; while it appears almost incredible that a human being could live almost five months in so much torture one half or one fourth of his time: but so it was, that after being wearied out with pain, and very much emaciated, in the course of three or four months he seemed habituated to suffering. Exhausted nature began to revive, and he to recover some strength and even flesh.

Besides those I have mentioned, you may readily suppose all the remedies recommended by authors, some of which are stiled "infallible," particularly by the celebrated Pott, were tried again and again to no purpose. Several physicians were consulted. The old women, far and near, were sending prescriptions after prescriptions, which were said to have performed little short of miracles on former occasions: but, alas! the same periodical symptoms would return after every stool, in defiance of them all.

I was certain matter would form up the rectum, and really wished such a termination would take place, however inconvenient a fistula might be, conceiving any thing preferable to such habitual torment. In this expectation I was mistaken.

"Tell it not in Gath," as the *opprobrium medicorum*:—An old woman, towards the end of the fifth month, hearing the torture a fellow creature had been labouring under for almost five months, sent word to him that her father, some certain number of years ago, had been afflicted for twelve or eighteen months as she understood Mr. I. M. was at that time, and that every thing failed that was tried, or, in other words, did no good, until some other old woman came and advised him to take a little fine hackled tow, and make it into the form of a cushion, so as to press up against the anus, and to confine it by bandages. This, she said, gave great relief, and he soon recovered. Mr. I. M. asked me, Shall I try this simple thing? Yes, by all means, was my reply! He tried it, and found considerably more relief than he had experienced for almost five months; but a thought struck him that something which would dilate the anus, and destroy that spasmodic action which he had so often experienced up the rectum, would be still more effectual, and more certainly confine the compress. To answer this grand intention, he twisted up a tent from the middle of the tow cushion, about two inches long, and an inch at its basis in diameter, and introduced it up the anus immediately after every stool, anointing it with hog's lard. This answered the intention completely; for from that

moment the pain ceased, and never returned, though a great soreness continued for several weeks. After using it for a month, he made an attempt to discontinue it, but with an evident and certain threatening of all those dreadful symptoms with which he had been too familiarly acquainted.

After wearing this mechanical remedy for two or three months, health of body and peace of mind were perfectly restored; and, to crown the whole, neither bleeding piles have recurred, nor any other disease has as yet made its appearance.

My reading has not been very extensive, though my practice is as much so as falls to the lot of country practitioners of medicine and surgery generally; and I am candid in declaring, I never have met with a case, in reading or practice, altogether parallel with this; and never a case, of any kind or degree, where the remedy appeared so *completely fitted to the cure of a disease!!!*

I shall leave you and others to make what comments on this case you please, being persuaded myself that many distressing cases of piles frequently occur, though seldom of equal violence with the one above recited, which might have been relieved in a day by this simple means, that have, for the want of better knowledge, continued for weeks, and months, notwithstanding the application of the boasted remedies of physicians, quacks, and old women. If you think this case deserving a place in your useful Repository, it is at your service; but for obvious reasons my name must be withheld.

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#### ARTICLE V.

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ACCOUNT of a remarkable CASE of WORMS: Communicated  
by Dr. FELIX PASCALIS, of Philadelphia, to Dr. MILLER.

Philadelphia, December 10, 1803.

SIR,

THE discovery of a non-descript intestinal worm or insect, by Dr. Stringham, as published in Hex. I. vol. vi. p. 262 of your Repository, I have the pleasure to confirm by a case which recently occurred in my practice, and which has put in my possession one of these hideous insects, perfectly similar to the largest of the four which are so well represented in the plate annexed to the communication alluded to.

An English boy, aged seven years, of muscular habit,



lively turn, and healthy constitution, was lately my patient for a fever, which, by its continuity, seemed to differ much from the usual type of our malignant epidemic. I saw him on the fourth day: he complained of no affection in the stomach: he could sit up: but his pupils were much enlarged; and I observed convulsive motions of his hands and feet. This circumstance, with the striking transparency of his face, fixed my attention only to the common ailment of worms; and to expel them I successively employed bitter and mercurial doses, but without effect. The inflammatory diathesis increased so much that I bled him myself, to have the opportunity of administering a more powerful dose, immediately after and during the temporary relaxation which is caused by bleeding. My expectation was again disappointed; but, at last, two glasses of Port wine and sweet oil promoted instantly the discharge of five of those *pedicular* insects. Four of them were thrown away, but the largest I washed myself, and submitted it to minute observation. It is perfectly similar to the largest of your plates, bearing that kind of semicircular shell which adapts itself to the lowest extremity of the body. This and the back part are cartilaginous, while its numerous legs and antennæ are vesicular, transparent, and gelatinous-like. I immersed it in a reduced alcoholic fluid, where it remains unaltered.

Is it not one of the *Aptera*, of the *cancer* or *oniscus* kind, or perhaps a *pediculus*? From these it does not materially differ but by want of eyes, which are not necessary to its existence. After the expulsion of the whole family, and of a few *lumbrics*, a considerable discharge of blood from the bowels, with other symptoms, presented the case as very alarming; but it turned out to be a malignant fever, although the season had already advanced to the middle of November, and there had been some frost.

With great difficulty the boy recovered; but to that strange and devouring kind of insect I could trace no particular circumstance of the disease, except the hæmorrhage. Like the *acarus*, perhaps, it strongly adheres to the internal membranes.

It is to be regretted, that, through reluctance, a close examination of fæces is seldom made, or that, by habit, the attention is directed only to some known sorts of worms; and thus various species of hydatides, and other vesicular insects, have heretofore escaped medical observation. I am inclined to believe that their spontaneous generation in the alimentary

canal is as natural as that of millions of insects in matter exposed to putrid fermentation; with the exception, however, that, in the part which is the seat of the digestive process, it implies contradiction to suppose that worms could be generated, and there any germ or insect, accidentally swallowed, must be destroyed. In the other part, or lower intestines, whatever substances are liable to undergo putrid fermentation, should, of course, be obstructed and retained during a certain length of time, before any germ could *pullulate*. As soon as the worm or insect is formed, it can creep up into the upper intestines, and even into the stomach, where it resists the destroying power of the digestive fluids, until it is deadened and expelled by other indigestible or poisonous substances.

In the above case, wine effected what medicines usually successful could not produce. I employed it out of a prejudice in favour of certain popular remedies, when we know that they are much depended upon; and this is the case in all the European wine countries, provided it is made purgative by the simple addition of some olive oil. The citric, oxalic, muriatic and gallic acids are likewise very good remedies; but with any of these, and even with mercury, we sometimes fail, because an inveterate case of worms is frequently the cause of *hepatitis*, *enteritis*, or other disorders, and symptomatic fevers, which counteract the best remedies, and require the discerning eye of a physician to combine the agency of a treatment well adapted to the complication of the case.

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## ARTICLE VI.

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*An Account of the MEASLES, as it appeared in Berwick, County of York, District of Maine, during a Part of the Years 1802 and 1803: Communicated by Dr. RICHARD HAZELTINE, of Berwick (Doughty's Falls).*

I SHALL premise to this account a few observations on the *weather* and *seasons*, during the same period, and previous to it, as far back as the former may reasonably be presumed to have influenced the disease.

The *winter* of 1801-2 was remarkably moderate and open. We had no snow that lay on the ground more than a week or ten days at a time, and but few falls of snow at all, till Monday, the 22d February, when we had nearly a foot from the

N. E. accompanied with violent wind. On the preceding Sabbath the ground was almost universally bare of snow, and the day remarkably pleasant. On the following Thursday (Feb. 25th) a violent snow-storm commenced from the N. E. and E. and continued, with little abatement, till March 1st. Then, however, it did not clear away, but remained overcast and squally until the 3d of the month. There fell in Berwick, and in most of the towns on the sea-board, for perhaps a hundred miles, and back into the country twenty or thirty, not less than three and an half or four feet of snow on a level. At Limerick, a town in this county, about thirty miles north of this place, and about the same distance west of Portland, I was informed there were not more than two feet of snow. At Concord (N. H.), on Merrimack River, about 45 miles west of Portsmouth, the storm was so moderate, and the fall of snow so small, that travellers pursued their journies in sleds and sleighs, without interruption.\* There were several falls of rain during the winter; and there were several days and nights in each month when water did not freeze in the open air. The diseases of the season were chiefly catarrhal affections, and they were very common. The winds were very variable, but mostly from the N. E. The *spring* of 1802, as far as the middle of May, was remarkably cold, dry and backward. April was believed to be colder than March, and many days and nights in it were thought to be cooler than many in the preceding January. I then had no thermometer by which to determine the truth of these observations. Vegetation was very backward the beginning of May; and on the morning of the 6th ice was discovered in a tub of water out of doors. On the 9th the willows were in full blossom. On the 11th a little rain fell, previous to which it was supposed that no person ever saw it drier for the season in this part of the country. After this period rains were so frequent, that, by the last of the month, the ground was as extremely wet as it had been dry; so that, in many places, people could not plant. About the middle of the month vegetation began

\* Since the first draught of this memoir, I find, in the New-York edition of Quincy's *Lexicon Physico-Medicum*, under the word *Wind*, that this remarkable snow-storm is spoken of as occurring "on the 21st, 22d, and 23d of February, 1802;" but whatever was the state of the weather at the time and places there referred to, certain I am, that at Concord (N. H.), where I then was on a visit to my friends, there were two days of sun-shine between the 22d and 25th of February, and that the violent and long-continued fall of snow commenced on the 25th, as above-mentioned.



to be rapid. On the 16th, which was a very fair, pleasant day, the martens for the first time were observed about the small houses which are provided for them; and one fact, particularly, it may not be useless to notice, which is, that they were very *inactive* and *wet*; frequently pecking themselves, and arranging their plumage, as if they had just emerged from the mud or bosom of the waters. This fact I do not adduce as an advocate for the opinion that swallows, of which the marten is a species, immerse into the water and mud every autumn; for I am not sufficiently satisfied whether to adopt this opinion, or the one which supposes them to be birds of passage. On the 7th of April we had a shower, with thunder and wind. On the 17th of May a storm of rain from the N. E. commenced, accompanied with thunder and lightning. About the last of May the apple-trees were in full blossom. The wind was very generally from the N. E. during the spring. The diseases of the season were colds and hoarsenesses, which were very frequent among persons of every age. Many diseases, in adults as well as children, were accompanied with worms in the alimentary canal: and most of the diseases of the season were attended with a hard pulse, and other marks of phlogistic diathesis. An inflammatory constitution of the air, and of the human body, had prevailed for several years last past, and still continued: blood-letting, of course, had been found highly serviceable in the treatment of diseases. Some time in March we were informed that the measles had appeared in New-York, and was traversing towards the Eastern States. During the *summer* season the weather did not run into extremes, but we had a favourable proportion of "showers and sunshine"—considerable thunder—good crops of most things except English grain and apples, which were rather scanty and rusty. The winds were chiefly from the S. E. and N. W. The diseases of the season were worm-cases, odontalgia, and dyspepsia; the two first of which were very numerous. The measles appeared first in June, and continued to spread. In the latter part of August were several cases of cholera and vomiting among children. The weather of the *autumn* of 1802 was generally fair and pleasant, though we had a sufficiency of rain for a plentiful crop of fall feed. Thunder was frequently heard. The winds were chiefly from the N. W. There was no considerable frost till the night of the 28th of September. Indian corn was very ripe by the first week in October. In October the thermometer was highest on the 10th, at 2 P. M. 80 deg. lowest on the 30th,

at 9 P. M. 36 deg. greatest variation on the 4th; from 6 A. M. to 2 P. M. 28 deg. higher. Barometer highest on the 3d and on the 12th, at 6 A. M. each day, 30 inches; lowest on the 10th, at 2 P. M. 28 inches 8-10ths: greatest variation on the 31st, 5 1-2 tenths lower from morning to evening. In November the thermometer was highest on the 14th, at 2 P. M. 59 deg. lowest on the 29th, at 7 A. M. 29 deg. greatest variation on the 14th, from 7 A. M. to 2 P. M. 20 deg. colder. Barometer highest on the 5th, at 7 A. M. 30 inches; lowest on the 1st, at 2 P. M. 28 inches 5-10ths: greatest variation on the 1st, from 2 to 9 A. M. 6-10ths of an inch higher. Colds and catarrhal affections were by far the most frequent diseases of the season; so that, by the 1st of November, hardly any person was exempt from *raucedo*, *coryza*, cough, or some kindred complaint. Next in frequency were vomitings and diarrhœas in children; diarrhœas in adults; then worm-cases, odontalgia, otalgia, and several applications for advice in cancerous tumours. By the first of October the measles was generally prevalent, so that it might be said to be epidemical. The *winter* of 1802-3 set in without any snow. There were small falls of snow on several days in December, but in no instance were there more than three inches at a time; and about that quantity fell twice in the month, but it did not continue more than a day or two. There were five small falls of snow in January; but not more than about four inches at any one time. On the 3d of February the ground was nearly destitute of snow or ice. On the night of the 16th, and on the 17th day of the month, we had a fall of six inches of snow, which was the most that fell at a time during the winter. The weather, through the season, was remarkably variable and open. There were frequent rains in each month, and in many instances they were considerable. Much rain fell in the night of the 2d, and on the 3d of February; and in some places to the south of this, we were informed considerable damage was done by lightning; I think in Ipswich (Mass.), and in the city of New-York. The ground was frozen very hard, and completely thawed again, several times during the winter. I find in my register of the weather, on the 12th of February, the following memorandum, viz. "A most agreeable south wind, which seems (and affects the face of the earth) like the gentle and enlivening breezes of the spring." On the 22d of the same month I recorded in my register the following words: "Snow nearly gone, and very muddy. We have had, this afternoon, the gentle breezes of the south, and the

mild and pleasant air of May." The winds, during the season, were chiefly from the N. W. and N. E. In December the thermometer was highest on the 29th, at 7 A. M. 51 deg. lowest on the 18th, 7 A. M. 3 deg. below zero: greatest variation on the 18th, from 7 A. M. to 9 P. M. 24 deg. warmer. Barometer in the same month was highest on the 25th, at 9 P. M. 30 inches 3-10ths: lowest on the 1st, at 9 P. M. 29 inches 1-20th: greatest variation on the 16th, from morning to evening, 5 1-2 tenths higher. In January the thermometer was highest on the 6th, at 2 P. M. 54 deg. lowest on the 30th, at 7 A. M. 3 deg. above zero: greatest variation on the 30th, from 7 A. M. to 3 P. M. 26 deg. warmer. The barometer was highest in the same month on the 4th, at 7 A. M. 30 inches 1-20th; lowest on the 6th, at 2 P. M. 28 inches 6-10ths: greatest variation on the 14th, from morning to evening, 5 1-2 tenths lower. The thermometer, in February, was highest on the 7th, at 2 P. M. 54 deg. lowest on the 5th, at 7 A. M. 11 deg. greatest change on the 2d, from morning to evening, 19 deg. warmer. The barometer, in the same month, was highest on the 16th, at 2 P. M. 30 inches 2 1-2 tenths; lowest on the 3d, at 4 P. M. 28 inches 8-10ths: greatest variation on the 2d, from morning to evening, 5 1-2 tenths of an inch lower. There were several days and nights during the season in which it did not freeze. The diseases were principally worm-cases, odontalgia, pleurodyna, and pulmonary complaints; but the season was, for the most part, healthy. The measles was not so frequent as in the preceding autumn, and appeared to be declining, both with respect to the number affected with it, and with respect to its malignancy.

I continue my observations on the weather no further; for although there was now and then a solitary case of the measles as late as August, 1803, yet the disease had nearly disappeared as early as the month of March.

In what follows respecting the measles I shall pay some regard to the method observed by Dr. Rush, in his account of the same disease for the year 1789, found in the second vol. of his *Medical Inquiries and Observations*.

The measles appeared in Berwick in the month of June, 1802, and at Doughty's Falls, so called, in said town, on the 14th of the same month: after which it spread gradually in every direction through the other parts of the town; and in October following it was, perhaps, more generally prevalent than at any other time.

The measles is a disease in which a physician is so little



consulted, that it is almost impossible for one to give an accurate history of its circumstances as it affects a majority of persons. He can record only what he observes of the few patients for whom he is consulted, who accidentally come under his eye, or what he may be informed of from good authority. From these sources I presume to offer what follows concerning the disease as very correct.

I notice no phenomenon which I could call a precursor of the disease, except the early appearance of the eruption in the internal fauces might be called one. In almost every instance where the commencement of the disease came to my knowledge, this appearance was to be observed at least 36, and in some cases 48 hours before the eruption appeared externally. I suspect the coryza, raucedo and tussis, which generally precede the cuticular eruption, and which constitute so important a trait in the diagnosis of the disease, are wholly attributable to this early eruption on the mucous membrane of the internal fauces, larynx, trachea, &c. I was informed by some persons, that they had pretty constantly observed a pale miliary eruption on the gums two or three days previous to the cuticular eruption; and I think I saw a case or two of this kind myself.

In this disease the several parts of the body were affected in the following manner.

1. The head was affected with pain, sometimes very severe. The eye-lids and eyes were swollen, red and inflamed, especially the former, sometimes "so as to obstruct the eye-sight." There were frequent instances of tooth-ach in adults who had carious teeth, bleeding at the nose, tinnitus aurium, and sometimes delirium, especially about the turn of the disease.

2. The nares, throat and lungs were affected with soreness, hoarseness, and a defluxion of a thin acrid fluid, which excited frequent sneezing, and sometimes a most distressing cough. But there were cases where there was an abundant discharge of this fluid without any cough. Some cough generally attended, but there were cases wholly without. The cough was commonly dry, and accompanied, according to its violence, with dyspnoea, and fixed or transient pains in different parts of the thorax. These pneumonic symptoms, together with the general febrile state of the system, were in some cases so considerable as to constitute, or very nearly approach, a genuine peripneumony. Hæmoptysis sometimes occurred in those cases where the pulmonary affection was considerable. There were cases in which there was no cough till

the appearance of the eruption on the skin. The organs of respiration were so considerably affected in a few children as to threaten a cynanche trachealis.

3. The stomach was much affected in this disease, principally with nausea and vomiting. Nausea was very frequent at the onset. In many cases the vomiting was very distressing and obstinate till one or more worms were ejected from the stomach, (which was not an unfrequent occurrence, even in adults,) when it would gradually, and sometimes immediately, cease. The matters generally thrown up were bile, and much phlegm. A gastrodynia was often complained of; and, in almost every instance when it occurred, there was reason to suppose it owing to worms in the stomach; and it was removed by infusion of spigelia and a cathartic. The appetite for food, with a few children, remained natural, but with most children and adults it was impaired, and in some there was a great loathing of food.

4. The bowels were frequently affected with diarrhœa and tormina, especially about the turn. Worms were often discharged in such cases. In some cases a diarrhœa attended through the whole course of the disease, and in such all the other circumstances appeared much more favourable, and more perfect and speedy recoveries were the consequence of it.

There was a great difference in this disease, in different persons, with respect to other circumstances than those already mentioned.

1. The fever which, in adults, in some instances, approximated or constituted a genuine peripneumony, in some children was hardly perceptible; and there were cases exhibiting every intermediate grade that can be conceived of. There was also a similar difference with respect to most of the symptoms which are commonly known to attend fever, or the measles. Every case which came to my notice was accompanied with the synocha of Dr. Cullen; though I was informed of a few cases which, it would seem, bore the typhoid type, and were called among the people "the black measles." The fever was generally highest about the turn of the eruption, or within 24 hours afterwards.

2. The interval of time which passed between the reception of the contagion and the commencement of the symptoms, from a few particular cases by which I had an opportunity of judging, I believe to have been about fourteen days: but there is, in my opinion, no circumstance in the measles involved in greater uncertainty.

3. The difference in the susceptibility of persons, with respect to the disease, was very surprising. Among several persons belonging to the same family, who had never had the disease, some took it; while others, who constantly ate, drank, slept, and associated with them in the most intimate manner, escaped it. Some, who took all the pains in their power to avoid infection, became diseased; while others, who were at equal pains to take it, passed unaffected. There were some who, at different times, held frequent and constant intercourse with the sick, either from necessity or an indifference with respect to the disease, or with a view to take it, and yet escaped the contagion; while there were others whose situations were quite insulated, having had no correspondence with, nor seen any person sick of the disease (before themselves), and yet were seized with it. It appeared, disappeared, and re-appeared several times in the same families, during its progress, in the course of a few months. Some persons and families escaped the disease who had been equally exposed with others who took it, at different times, in every season of the year: and several persons of different ages, from twenty to eighty years, who had formerly been exposed to the disease several times when it was epidemical, without taking it, were now seized, and went through it in no respect differently from others who had it.

4. After the accession of the symptoms, the eruption appeared, for the most part, on the third or fourth day; in a few cases not till the sixth or eighth.

5. The eruption appeared externally first on the hairy scalp, temples and forehead, progressing downward, and taking up a space of twenty-four or forty-eight hours before it appeared on the feet: and when it appeared on the feet, from being red it began to grow pale in the face, and constituted what is called the *turn* of the disease. After this it gradually disappeared, taking up another space of time from two to four days. The *quantity* of the eruption was different in different persons. In some it appeared only on the head, breast and shoulders; in others, especially upon the turn, there was an uniform redness diffused over almost the whole skin. The several attending symptoms were not mitigated by the appearance nor by the quantity of the eruption. A troublesome itching was not uncommon. There was nothing remarkable with respect to the *colour* of the eruption. As to its *figure*, it appeared in clusters of different sizes, containing several points manifestly eminent in every case which I saw or heard



of, except one or two, where the small red points constituting the eruption did not appear in clusters, but were uniformly scattered over the skin.

6. In a few cases the fever was so high, and the inflammatory affection of the skin so considerable, that, upon the retrocession of the disease, a partial depilation took place.

7. I saw but few cases of its being followed by a desquamation of the cuticle.

By far the greater number of persons who had this disease went through it without seeking medical aid; but I believe many would have had it more favourably had they had *proper* medical assistance. It proved fatal to no more than two or three in this town, which contains above 4000 inhabitants. It was believed by many people who were past the meridian of life, and had seen the disease several times epidemical, that it was now severer than they had ever known it: but I presume this opinion was erroneous, and to be attributed to that propensity in the human mind which generally disposes us to consider our present evils more distressing and afflictive than the past. I must confess, however, that the disease appeared to be more severe than I had known it in other places; but this fact, I believe, was more fairly to be attributed to injudicious management than any other cause. But whether I am correct in this opinion or not, certain I am that the management in this part of the country was different from, and the progress and termination of the disease were more violent and unfavourable than what was common in some other places. The disease, generally speaking, was more violent in adults than in children; though there were instances where it went very mildly with the former and severely with the latter. It is, however, a fact that cannot be too frequently recurred to when this disease is epidemical, that both those adults and children whose habitations would hardly screen them from the inclemencies of the weather; whose provisions, even in health, were scanty and simple; whose principal beverage in sickness was "Adam's ale;" and whose couches were little better than a bed of straw—suffered much less when the measles was upon them than those who were in opposite circumstances. So true it is, in every condition of human life, the Ruler of the Universe has most happily accommodated one thing to another. It is absolutely a fact, that those persons who had the least done for them in the measles, or were not in a capacity to procure much assistance, had the disease much lighter than those to whom every attention was paid by physicians and nurses.

I shall now give an account of my method of treating the measles: And the remedies I recommended and used were,

1st. Blood-letting. By far the greater number of cases which I saw, or which came under my care, were attended with a *hard pulse—increased heat—increased thirst—more or less pain—sometimes difficult breathing and cough*. Hence the propriety and necessity of blood-letting must be sufficiently obvious to every person who has been a *medical reader*, or who has seen much *good practice*. The foregoing phenomena I always considered as constituting a most cogent indication of phlebotomy. And wherever I met with any of them, especially the *hard pulse*, I did not hesitate a moment to employ the lancet. It is not necessary that the pulse should be *full* to require and justify blood-letting in the measles; for the pulse shall be quite *small*, and yet blood-letting may be indispensable. The state of the pulse which requires this evacuation has been expressed, by different writers, by different qualifying epithets; as a *hard pulse*, a *tense pulse*, a *corded pulse*, a *contracted pulse*, and perhaps some others. But as simplicity in language ought always to be studied, it may be sufficient to call the pulse which requires blood-letting in the measles a *tense pulse*, which may be defined, *a pulse that excites, on the ends of the fingers, a sensation of resistance similar to that which is produced by the vibrations of a string upon the stretch*. But I will now mention the *effects* of blood-letting in the measles.

When employed at the onset, the disease bore a milder aspect through every subsequent stage; and when employed at any period of the disease, under the circumstances above-mentioned, was always highly useful. It was the most effectual means to remove pain in every part of the body—to relieve cough—to promote the eruption—to prevent and allay thirst—to prevent a diarrhoea, ophthalmia, and hoarseness, both during the progress and after the turn of the disease. It likewise happily superseded the use of several disagreeable medicaments, such as emetics, cathartics, setons and blisters. Furthermore, it put the patient upon his legs in two or three days after the turn of the disease, instead of his continuing an invalid for several weeks or months, and, perhaps, finally running into a phthisis pulmonalis, which would carry him off. This representation of the efficacy of blood-letting in the measles is neither fanciful nor founded in prejudice, but is, according to what has taken place under my own eye, and in my own practice and that of other practitioners, repeatedly.

And I feel myself warranted to affirm, that if blood-letting is seasonably and sufficiently performed in the measles, in the circumstances above-mentioned, not one case in a hundred shall be followed with a consumption, or any other disagreeable consequence whatever. It will readily be conceived, that the quantity taken, to be useful, must be adapted to the circumstances of the disease. Thus, in some cases of adults, it was necessary to take from sixteen to thirty-two ounces of blood, while in children four ounces were sufficient, and highly useful. I bled several persons, both old and young, once, and had occasion to bleed no one more than once: but I knew one man who was bled twice plentifully by my direction, and it appeared, after his recovery, that he would have spared more blood to advantage. To place the utility of blood-letting in this disease in a clearer light, if possible, I will relate one case that came under my care.

A girl who lived with me, aged eleven years, was drooping three or four days with gastrodynia, head-ach, nausea, vomiting, and a tardy eruption of the disease. A gentle emetic brought out the eruption; but all the symptoms were increased, and became very severe. She now complained of great heat, thirst, cough, hoarseness, soreness of the trachea and larynx, laborious and hurried respiration, obtuse pain under the sternum, constant vomiting of every thing taken into the stomach, *acute, small, quick and tense pulse*, with great restlessness and anxiety. A second emetic was exhibited, and brought up plentifully of bile, but gave no relief. I hesitated what to do, but was sensible that something must be done immediately, or the disease would probably assume a malignant form, and prove fatal. I reviewed the practice which is generally pursued in similar cases, and considered that the effects of what are called febrifuges, pectorals and blisters, are trifling, uncertain, and often distressing, to no profit—that mercury, which promised the fairest to afford relief of any thing except blood-letting, was slow in its operation, and not to be depended on in such cases as required immediate assistance—therefore I determined to open a vein. While the blood was flowing she spoke out, and said she felt better. I did not take more than four ounces, and was highly delighted with the consequences of this simple evacuation. This was in the evening. The preceding night she required an attendant, and frequent waiting on; through the day she was unable to sit up; but after taking blood, she had a comfortable night, and was so well on the morrow, that, some time in the forenoon,



she rose from her bed, and came down stairs without her mistress's knowledge. She received no injury, however, and continued rapidly to recover.

I will not deny that mercury would have been useful in this case, and restored the little patient to perfect health; but, at the same time, I will maintain that its effects would have been slower, less certain, and less efficacious than blood-letting, exclusive of the trouble of a salivation.

The remedies which stood next in point of usefulness were, 2dly. Emetics and cathartics. After sufficient bleeding, which I will suppose was performed at the commencement of the disease, the business of the physician might be said, in most cases, to be at least half accomplished: then, if a nausea and vomiting attended, and proved insufficient to empty the stomach—if crudities remained in the primæ viæ, or lower portions of the intestinal canal—if the belly was bound, or a diarrhœa present, and, from the fœtor or colour of the matters discharged, indicated further evacuation—an emetic of ant. tart. alone, or with ipecacuanha, or with calomel, or with merc. emet. flav. (I have a high opinion of mercury in the measles), or any two or three of them together, or a dose of rhubarb and sal. tart. or with calomel, or a dose of jalap and calomel, or any other emetic or cathartic which seemed most proper in the judgment of the practitioner, was highly serviceable. It seems to be an important object among people and some practitioners, to give something that is calculated to “bring the measles out,” as the expression is. I never knew any thing necessary for that purpose where the alimentary canal was unoppressed by crudities, and where the fever was not suffered to run too high: for I always observed, that where the stomach and intestines, and the heat of the body, were nearest their natural condition and temperature, the measles was mildest. Hence the utility of blood-letting, or of the exhibition of an emetic or cathartic, in promoting the eruption of the disease, and rendering it milder, has been long known and confessed. Emetics were sometimes necessary after the turn of the disease; but cathartics were more generally and advantageously employed, and, with an abstemious diet for a few days, were commonly all that was necessary where blood-letting had been seasonably and sufficiently performed, and the cool regimen observed instead of the hot.

3dly. Where blood-letting had been neglected, blisters were serviceable in removing pain, when applied directly upon or near the pained parts. They were also useful in curing op-

thalmia; but I met with few cases in which they were required.

4thly. Opiates were useful in checking diarrhœa, appeasing cough, and in allaying general anxiety and uneasiness, *after the inflammatory action of the sanguiferous system was sufficiently subdued.*

5thly. Where worms were troublesome, a strong infusion of the spigelia in water, sweetened with molasses, and given in the latter part of the afternoon and evening, on an empty stomach, and followed next morning with a dose of rhubarb and calomel, or jalap and calomel, according to the state of the intestines with respect to diarrhœa or costiveness, was generally all that was necessary, excepting in a few cases, where there was a propensity to puke from worms in the stomach; for then I found it highly useful to apply to the pit of the stomach a cataplasm of fel bovinum and rye-meal, or any of the bitter herbs infused in vinegar or ardent spirits.

The regimen which I directed was as follows:

For drinks, I recommended cold water, where a fixed pain in the side, breast or stomach, or where a violent cough and difficult breathing, indicating a considerable pneumonic affection, did not forbid its use; also barley-water, apple-water, tamarind-water, cyder and water, teas of bran, linseed, low-baum, elder-flowers, ground-ivy, &c. &c. Where a cough was distressing, a tea of liquorice and seneka (polygala) roots was found very beneficial. I directed a light, thin diet, such as water-gruel, rice-gruel, water-porridge, bread boiled in water, &c. &c. I ordered, in every instance, a free admission of cool air, or, at least, of such a temperature as the sick were most accustomed to in health, and saw no injurious effects from it. Where the feet and legs were cold, which was often the case even while the other parts of the body were preternaturally hot, especially about the commencement of the eruption, very great benefit was derived from pediluvia twice or thrice a-day, and sometimes from sinapisms to the feet, particularly when the head was much affected. Where there was no unusual thirst nor loss of appetite, which was sometimes the case among children, I allowed them to eat, drink, and run out of doors, as in health, and saw no bad consequences from such indulgence, provided the feet were kept warm and dry: and I uniformly advised people to go out in good weather, and take what exercise they could without fatigue, during the whole course of the disease. I knew, and was informed of several persons who were attacked with

the measles on a journey, and not knowing what ailed them, pursued their journey, and thereby had the disease very mildly.

The complaints which commonly follow the measles were removed by blood-letting, purging, a spare diet, blisters and opiates, together with suitable vermifuges where they were necessary, and suitable exercise.

I conclude with the following remarks:

1. I knew several pregnant females pass through the disease without any thing remarkable happening in consequence of it, except that they were rather more severely affected with it than others.

2. In those cases which proved fatal, I was informed that the hot regimen was rigorously pursued; such as giving the patients hot driving teas, and warm medicines; keeping them in bed, and in warm rooms.

3. Two objects only seem necessary to be pursued to insure a mild form of the measles at all times and in all places: 1st. To preserve the heat of the body as nearly in its natural temperature as possible; and, 2dly. To keep the stomach and intestines free from accumulated, offensive matters of any kind; or, in other words, to keep the stomach and intestines in a state of action, instead of suffering them to remain in a state of torpor. Hence, as a certain degree of torpor affects the stomach and intestines for a few of the first days of the disease, and previous to the increased action of the vessels of the skin in all exanthematous diseases, we learn why, on some occasions, a little warm drink, or ardent spirit, or opium, or an emetic or cathartic, or blood-letting, is so useful in promoting the eruption of the measles. For it is not to be denied, that although the antiphlogistic regimen is best adapted to the nature of the disease in our part of the country, there are cases when a gentle stimulus is highly serviceable in promoting the eruption, which it does by increasing the action of the stomach and its corresponding associate motions. But I am persuaded that, in most cases, blood-letting is much more proper. Blood-letting answers the same purpose, by equalizing the excitement of the system; that is, by lessening it in the sanguiferous system, and thereby increasing it in the stomach and capillary vessels of the skin. The substance of this remark may be comprized in fewer words; viz. the nearer the heat of the body is to its natural temperature, and the condition of the primæ viæ to their natural state, the milder will be the attack and progress of the measles at all times, and in all persons and places.



### 358 *Premature Decay of Human Teeth in America.*

4. From several facts which came to my knowledge, I have reason to believe that a preparation for the disease by mild diet will generally lessen its force.

5. Calomel, daily given in small doses, appeared to produce specific and very useful effects in removing the pulmonary complaints after blood-letting, or where the latter was objected to, or sparingly employed.

Lastly. There are cases of measles in which it is somewhat difficult to determine when blood-letting is necessary. The circumstances by which this point is best ascertained, are the state of the symptoms in general, but especially of the pulse. Where there is a tense, or, what I consider synonymous, a hard pulse, blood-letting is always warrantable. There are many other states of the pulse which require blood-letting besides the tense or hard pulse, but I need not name them. The convalescence from the measles is sometimes marked by a degree of indisposition which seems to deserve no attention, and is commonly neglected by patients and physicians, but for the removal of which, and the prevention of a consumption, in which it too often terminates, blood-letting is as necessary as in the most acute forms of the disease.\*

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## ARTICLE VII.

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*An INQUIRY into the CAUSE of the PREMATURE DECAY of the HUMAN TEETH in AMERICA. By Dr. MALACHI FOOT, of the City of New-York.*

**B**Y the appellation "teeth," in the sequel, is meant not only those bony substances properly so called, with their appendages, as nerves and blood-vessels; but also the membranes in which they are partially enveloped, which line the alveolar processes and sockets, with the gums.

Much irrelative matter has been advanced concerning the comparatively inferior state of American teeth. So much influence has custom in appropriating to the *dentist* the exclusive consideration of every thing appertaining to this subject; and so long has this department of the profession, both in their reasonings and practice, been in the habit of considering these

\* "It is common for the measles, even when they have not been of a violent kind, to be succeeded by inflammatory affections, particularly ophthalmia and phthisis."—*Dr. Cullen.*

organs as mere appendages of the animal machine, that I doubt not that all general reasonings thereon will be considered as absurd, if not any view of the subject, as an infringement of their rights, and as an intrusion upon "hallowed ground." That the teeth should be affected by general agents, analogous to other parts of the system, and subjected by their operation to morbid derangements, is a reasonable conclusion; and, in conformity thereto, we find the most vigorous and robust habits of body favoured with a sound and healthy condition of those organs; while the opposite state is often traced to impaired health and constitutional circumstances.

Though I am not disposed to deny *in toto* the influence of certain local causes in impairing a sound and healthy state of the teeth, they are certainly incompetent to a solution of the present inquiry. The truth of this is obvious in answers to the following interrogatories:—Are Europeans less subject to diseased teeth at a given age than Americans? Is this owing to a neglect of local management, or the practice of taking into the mouth substances from which the former abstain? Do European emigrants experience the same inconvenience? If these questions be answered in the affirmative, we are to look to the climate for the solution of an inquiry otherwise obscure.

Of agents whose operations are general, there are none, at least in this climate, whose influence is more variable and fluctuating, and, withal, less controulable by human wisdom, than that of temperature. The importance to the animal economy of a due degree of heat is well known. But it is not merely the degree of *present caloric*, or its absence, that proves so injurious to the principle of life, as its relation to the state of the system at the time of operation. So happily calculated are living bodies to adapt themselves to external agents, and particularly to that of temperature, when its first impressions and its succeeding operations are equable and permanent, that scarcely any known extreme is incompatible with health and vigour. It is to the variable and fluctuating conditions of temperature, aided by sudden alternations of drought and moisture, that morbid impressions are principally imputable.

However plausible or accurate may be the opinion of an eminent modern philosopher,\* who teaches that a set of nerves is exclusively appropriated to the perception of heat and cold, even its fallacy, if such, does not militate against the well-

\* Dr. Darwin.

known fact, that the teeth are possessed of a nice and exquisite degree of susceptibility to the operations of temperature. Hence, by a wise provision in the animal economy, we are enabled to measure the degree of heat and cold in bodies taken into the mouth, and thereby to guard from lesion a more important organ—the stomach.

The teeth, from their exposed situation, are subject to the local operations of temperature, and, doubtless, cannot but experience much inconvenience from immediate impressions of external air, as well as by substances taken into the mouth: but their very general and comparatively early failure leads to the suspicion of a more impressive agency of the injurious causes.

It is by a proper application of the interesting doctrines of *association*, that many circumstances in the animal economy, otherwise obscure, receive a happy illustration. May not the teeth be considered as a *centre of association*, in which are concentrated the morbid impressions of temperature, operating primarily on the system, either generally or partially? Analogous to this is the operation of certain well-known agents, as noxious miasmata, in concentrating their action in the stomach and liver. The parts about the larynx and trachea become the conspicuous seat of the agency of the canine poison, however remote the part by which that deadly virus gains admission; and certain articles of the *Materia Medica* appear to possess a determined and apparently exclusive operation on particular parts of the system.

In a view to estimate the comparatively controuling and predominant influence of particular portions of the body, the importance of the organs of which we treat is, in this respect, greater than a superficial view of the subject would seem to warrant. This relation is conspicuous as respects some of the organs of sense. With that of hearing, it is exemplified in a certain indescribable sensation excited by the harsh grating of two bodies against each other, as the edges of certain sea-shells, broken china, &c. The unpleasant sensation produced in these organs by rubbing the ends of the fingers over a rough surface, as a coarse wool hat, indicates a strong sympathy with the sense of touch.

This opinion also receives no small accession of plausibility from the doctrine of reciprocal sympathies. Among other observers, we are presented with opinions of no less weight than those of Drs. Darwin and Rush, that diseases of various types, as dyspepsia, hæmicrania, hysteria, intermittent fever,



and even epilepsy, have had their origin successfully traced to diseased teeth.

While reasonings of this kind tend to establish the opinion of a strong and intimate connection between the teeth and other parts of the system, the additional consideration of their exquisite sensibility to heat and cold leaves no reasonable doubt of their aptitude to receive, as a "centre of association," to a disproportionate degree, all impressions of either increased or diminished temperature.

Should an argument unfavourable to the doctrine which is the object of this paper arise, from the circumstance of numerous and striking exemptions in certain classes whose occupations require undue exposure, we need only to recur to the predominant power of habit and established temperaments in removing the (at first) apparently plausible objection. Hence the native Red Men of America, with few exceptions, are possessed of sound and beautiful teeth; while recent European emigrants experience the influence of our climate most sensibly, and are the first to complain of these organs.

A confidence in the opinions above advanced leaves much room to doubt the efficacy of an exclusively local management. Estimating the value of general and local remedies, whether preventative or otherwise, by the degree of separate influence justly due to each of the corresponding causes, we shall probably place much less confidence in the latter, and hope much from a nice management of cloathing, and adapting its variation to *present weather*.

How much soever may be accomplished by those whose circumstances favour a disposition to avoid undue exposure, and by a cautious management of dress, it is but too obvious that, in a climate like that of America, even a sedulous combination of every means necessary to evade its fluctuating character is scarcely competent to an entire exemption from its noxious influence.

If a practice resulting from these opinions could influence the present modes of dress among a respectable part of society, it is presumed that it might, at least, prevent an unnecessary degree of mortality.

If the uncouth situation of a young female crippled by rheumatism, and especially a consideration of the disproportionate number of that class of victims to phthisis pulmonalis, which swells the columns of our weekly obituary, should have no salutary effect, a reasonable hope might be indulged,

that the value so universally attached to handsome teeth, and especially that the severe pain so universally resulting from the operations of the dentist, might have their influence.

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## ARTICLE VIII.

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*An ATTEMPT to deduce a NOMENCLATURE of certain FEBRILE and PESTILENTIAL DISEASES from the ORIGIN and NATURE of their REMOTE CAUSE. By EDWARD MILLER, M. D.*

**T**HERE is a groupe of diseases related to one another by obvious affinities, and essentially differing from all others, which do not appear to have been hitherto discriminated with sufficient distinctness in any arrangement of Nosology. It is not easy to determine precisely the whole number that ought to be admitted into this natural assemblage. The Oriental Plague, the Yellow Fever of America, with all the subordinate grades of Remittents and Intermittents, and the several varieties of Typhus, are those which exhibit the most intimate relations. Dysentery, and some other distempers of warm climates and seasons, which are apt to become epidemic, certainly deserve to stand in the same association. All these, as they are supposed to be the effect of a common principle, somewhat modified, which is properly called *Miasma*, or the effluvium of dead animal and vegetable substances undergoing decomposition, may be denominated *Miasmatic Diseases*.

Miasmatic Diseases fill an immense space in the history of the epidemic and pestilential distempers which have always been the scourge of the human race. From their peculiar origin and causes, from their influence on commerce, from their effects on the hospitable and liberal intercourse of nations, from the improvements which might be made by communities and individuals towards preventing and mitigating the prevalence of them, and on a variety of other accounts, they deserve to be considered separately from all other distempers, and not only interesting as a distinct whole, but likewise as made up of various species, possessing different characters, qualities and degrees, which are well worthy of being analyzed, distinguished, and minutely discussed.

The nomenclature of these diseases ought to embrace the leading facts belonging to the subject, and divide and arrange

them in a natural method. This does not appear to have been sufficiently done in any of the systems of Nosology which are now before the public; and considering the declining credit of such modes of arranging diseases, the defect is not likely to be soon supplied. It would be inconsistent with the design and limits of these remarks to inquire generally into the merits of Nosology. While the advantages of it in some respects cannot be denied, it must be granted, on the other hand, that it is liable to much abuse, and too often leads such as confide in it to content themselves with a parade of terms instead of substantial knowledge. To inquire into the comparative merits of the various plans of Nosology hitherto published, would open a field still wider, on which it is not intended now to enter. The causes, seats, and especially the symptoms of diseases, have been taken by the different writers as the foundation of arrangement. Sauvages and Cullen, and most of the other nosologists, endeavour to discriminate diseases by their symptoms, and labour with great attention to distinguish such as are merely accidental, or concomitant, from those which are essential and inseparable.

It has been generally supposed that the science of Medicine is yet too imperfect to admit of the erecting of a system of nosology on the causes of diseases. The author of *Zoonomia*, with that boldness and force of mind which distinguish most of his researches, has ventured to take the proximate cause as the ground of his classic character. He contends that this mode of discrimination is better adapted than any other to enable physicians distinctly to understand the nature of diseases by a comparison of their essential properties, to facilitate the knowledge of the modes of treatment, and to discover the nature and proper denomination of any disease previously unknown.

Instead of the proximate, the remote cause is resorted to in this attempt to assign a distinct character to the assemblage of diseases now under consideration.\* It is not expected that the

\* Dr. Cullen admits the propriety of sometimes discriminating diseases by a reference to their remote cause in the following words: "Principii quædam similitudo, morborum inde in diversis hominibus genitorum similitudinem arguit; ita, quando morbi diversorum hominum, ex uno eodemque principio oriuntur; quando, etiam principium illud, ad morbum gignendum, in unoquoque necessarium sit; denique, quando idem principium, ubique fere ejusdem qualitatis et vis esse videatur, tum demum morbos, ex ejusmodi principio genitos, ejusdem vel simillimæ naturæ esse, judicare licet."—*Vide Synopsis. Nosolog. Method. p. 194.*

In conformity to this, in his character of *Intermittentes*, he describes them, "*Febres, miasmata paludum ortæ,*" &c.—*Ibid. p. 204.*



new terms which are here to be proposed, will be received into professional or popular use, or, indeed, that they will be well suited for that purpose. The object of proposing them is chiefly to produce a clear and distinct impression of that doctrine concerning the origin, nature and relations of the diseases in question, which has been long maintained in this work, and yet by many seems to have been greatly misunderstood. Through the medium of new language, it is possible some additional light may be shed on this intricate subject. If the remote cause of Miasmatic diseases had been correctly understood, much of their prevalence and ravages might have been spared, and much of the zeal and learning wasted in controversy about the mode of their introduction would have been devoted to the more substantial objects of ascertaining their nature and treatment.

It is probable the truth on this subject would long since have universally predominated, if the doctrine of the contagiousness of Miasmatic diseases, and their exportation and importation from one region of the globe to another, had not been so precipitately adopted. There is scarcely any thing in the history of medical opinions which deserves to be more regretted, which has done so much to retard the progress of improvement, or to close men's eyes against the light of truth. Under the influence of this error, the knowledge of febrile diseases, for a long period, was either stationary or retrograde. No reference to contagion is to be found in the works of Hippocrates, Celsus, Aretæus or Trallian.\* These venerable observers of nature saw much of pestilential epidemics; but they saw nothing of contagion, or of the introduction of such diseases by importation from abroad. From the writings of Galen it may be perceived that, amidst a multitude of other speculative notions, he believed in febrile contagion. From him it passed down with the herd of copyists and interpreters of his opinions to the time of Fracastorius, who reduced the doctrine to a more systematic form, and contributed much to its currency and authority. In this state it descended to the time of Dr. Mead, who may be regarded as the great modern advocate of contagion, whose learning and professional emi-

\* This is affirmed on the authority of Dr. Blane (see his *Observations on the Diseases of Seamen*, p. 217); as well as my own examination of two of these writers, viz. Hippocrates and Celsus; the others not being within my reach. Celsus, who may be said to treat formally of the Plague, and gives a chapter of rules for escaping it, makes no mention of contagion; but assigns certain winds, that is, in effect, a certain degree of heat and moisture, as the cause of it.—See *Celsus De Medicina*, p. 40, 41.

hence have done much to produce that confidence in the doctrine which is still to be found in many parts of Europe.

The prejudices of Europe on this subject are rapidly losing their influence in America. Much of what was formerly ascribed to contagion is now believed to arise from the miasma of putrefaction. Medical opinion, however, in this country, is still in some degree undetermined as to the limits of Miasmatic diseases. Many who entertain no doubts with respect to the febrile epidemics of summer and autumn, and who do not hesitate to refer the pestilential distempers called Plague and Yellow Fever to the same source, are still unwilling to consider Typhus as coming under a similar denomination. The contagiousness of this latter disease is yet held by many respectable physicians who long since denied the existence of that quality in Yellow Fever and Plague. It is one of the leading objects of this inquiry to ascertain the relation of Typhus to Yellow Fever and Plague, and to show that, with some peculiar modifications in the manner of production; it is truly to be ascribed to a similar miasmatic origin.

In order to maintain this opinion concerning the origin of Typhus, and to exhibit the grounds of the new nomenclature of Miasmatic diseases which is here to be proposed, it will be necessary to consider in detail the modes in which they are supposed to be severally produced.

The miasma, which excites Yellow Fever and all the inferior grades of disease termed Remittents and Intermittents, is emitted from dead animal and vegetable substances, immersed in a certain degree of moisture, and undergoing decomposition by means of solar heat. Hence these diseases are found in the neighbourhood of low and swampy grounds, known to abound in this kind of filth, and at that season when such filth is powerfully acted upon by heat; or they are found in large and crowded cities, where these pernicious substances are collected in large masses, and where the heat, from a variety of causes, rises much higher than in the adjacent country. In consequence of the quantity of these putrefying materials which overspread a swampy soil, or become accumulated within the area of a populous town, together with the high heat before mentioned, a large portion of the incumbent air is rendered noxious by this miasma, and a frequent result is epidemic disease. While the warm season continues to advance, and the filth remains in a condition to exhale this poison, sickness rages with increasing violence, acquires additional virulence and a more widely-spreading malignity. At length this mi-

asma banishes or overpowers all other causes of disease within the range of its activity, usurps their places, and thereby forms what is called an epidemic constitution. This view of the subject is confirmed by the consequences of a reduced temperature. No sooner is the atmospheric heat diminished to the degree which is called cool weather, and especially to the degree of frost, than this evil, constantly dependant on heat for its origin and progress, begins to subside, and speedily vanishes. Solar heat, therefore, operating on masses of filth exposed to the open air, is the principal agent in producing the miasma of Yellow Fever.

On the other hand, the miasma of Typhus, while it bears an obvious relation to that just described, exhibits also many important differences. Typhus is generally, and, it is believed, always originally, the pestilence of poverty, of low life, of crowded habitations, of personal and domestic filth. In the evolution of the miasma of Typhus, the matter of perspiration, and, generally, of all the excretions of the human body, constitutes the material, and animal warmth supplies the degree of heat necessary to prepare and set loose the poisonous gas. No large masses of animal and vegetable filth, exposed to the air and solar heat, are requisite to the creation of the typhous miasma; for it is diffused only a few feet from its source, and the general atmosphere of cities or neighbourhoods is never contaminated by it; but, in order to find it, we must examine the dress and persons, or the interior economy of the dwellings of the miserable beings by whose indigence, negligence and filthiness it is immediately generated. The excesses of solar heat are not wanted to ripen this destructive evil; for the heat of the human body, in contact with dress, bedding, furniture, &c. loaded with animal excretions, and rarely changed, washed or ventilated, is fully sufficient to account for the formation and evolution of this poison. Hence the heat of summer, so far from being necessary to produce the miasma of Typhus, is altogether opposed to it, by inducing that freedom in the ventilation of houses, clothes, bedding and furniture, which, by diluting, destroys it in the germ. Typhus, therefore, is commonly a disease of cold climates or seasons, where the habitations of the poor and the filthy are crowded and shut up, and where the exhalations from human excretions, acted upon by animal heat, are not dissipated nor diluted by the admission of fresh air.

If this view of the process of nature in the constitution of



these febrile poisons be correct, it will not be deemed improper to attempt to distinguish and characterize them respectively by denominations which point to their several sources and modes of production, and thereby express their relations as well as their differences.

Assuming, therefore, the origin and modes of production of the two species of miasmatic poison which have been just described, they must be considered as gaseous fluids floating on the surfaces or surrounding the bodies from which they are respectively exhaled; and hence, like the ethereal fluids of magnetism and electricity, they may properly be called *miasmatic atmospheres*.

In order to distinguish these two *miasmatic atmospheres*, and, at the same time, duly to fix in the mind the impression of the origin and production of them, it is judged expedient to designate each by terms which will invariably express the process of nature in their formation. As the Greek language has been generally resorted to in the framing of scientific nomenclature, I shall employ the adjective ΚΟΙΝΟΣ, *common* or *public*, to denote the one species of miasma, and ΙΔΙΟΣ, *personal* or *private*, to denote the other. The application of these terms will be readily understood. That portion of air charged with miasmata exhaled by solar heat from the surface of swampy grounds, or from masses of filth overspreading the open area of cities, according to this distinction, is denominated *Atmosphæra Koino-Miasmatica*. And that other small portion of air, contaminated by miasmata emitted from and surrounding the body, clothes, bedding and furniture of persons immersed in the filth of their own excretions, and of those associated in the same family with them, accumulated, long retained, and acted upon by animal heat, is denominated *Atmosphæra Idio-Miasmatica*. Or, in other words, the *Koino-miasmatic atmosphere* is that which is derived from a *common* or *public* mass of putrefying matter, expanded to the solar influence; while, on the contrary, the *Idio-miasmatic* is that derived from a *personal* or *private* source, being produced from the filth of individuals and their habitations, and diffused around them only for a small distance. The former of these atmospheres seems to be appropriately termed *Koino-miasmatic*; because the pernicious materials which create it lie open to public view, and may properly be called *public nuisances*; are collected and suffered to become virulent by public remissness and negligence; form a noxious power which affects the whole adjacent community, and, compared

with typhous miasma, is of considerable extent; and because they properly come under the notice of the magistracy or police, as being a source of public mischief. The latter of the atmospheres in question is properly called *Idio-miasmatic*; because the pernicious material from which it is derived is made up of excretions from the bodies of individuals; is generally the result of personal uncleanness and domestic filth; is, when compared with the former, diffused only to a very short distance from its source; and thus adhering to the bodies and clothes of individuals, or to the bedding and furniture of private houses, cannot so readily fall under the notice or cognizance of the public authority.\*

The reader will observe that the denominations stated above have a principal respect to the source from which the putrid materials are derived, which, when acted upon by heat, emit the two kinds of miasmata. It occurred to me that, as solar heat chiefly operates in the one case, and animal heat in the other, the denominations might, perhaps, with equal propriety, be drawn from the respective sources of the caloric employed in the evolution of these miasmata. But further reflection induced me to adhere to the first impression. Solar heat, as one of the general blessings of the world, may be properly said to be *common* or *public*; and animal heat, belonging to the body in which it is evolved, may justly be considered in a *personal* or *individual* sense. The terms which have been selected are therefore still supposed to be sufficiently appropriate, whether respect be principally had to the quality and situation of the putrid materials, to the source of the heat, or to the extent of space in which the miasmata may be diffused.

If this view of the subject be correct, it will follow that the two kinds of febrile poison just described will produce corresponding kinds of febrile disease, one of which may be distinguished by the title of †*Pyrexia Koino-miasmatica*, the

\* The febrile poison which is so frequently generated on board of ships, and thereby gives colour to the opinion of contagion, and importation, is sometimes *Koino-miasmatic*, sometimes *Idio-miasmatic*. Vessels abounding in vegetable and animal filth, and navigating the warm latitudes, or arriving in port during a hot season, will be apt to generate the former species of miasma; while such as sail on long voyages, and are crowded with passengers, who neglect or are deprived of the means of cleanliness and ventilation, will be chiefly liable to produce the latter.

† The word *Pyrexia* is here preferred to *Febris*, or *Fever*, first, for the sake of preserving uniformity of language in the choice of these terms; and, secondly, because *Febris*, as used by the nosologists, does not seem

other by that of *Pyrexia Idio-miasmatica*. Under the former, as was said before, will be included the Oriental Plague, Yellow Fever, and all the inferior grades called Remittents and Intermittents; while under the latter will stand all the varieties of Typhus.

It would be a subject of curious and interesting inquiry, how far these different febrile poisons are susceptible of being blended, and thereby of producing effects of a mixed kind; and likewise how far the *Idio-miasmatic atmosphere*, by means of high solar heat and other concurring circumstances, is capable of conversion into the *Koino-miasmatic atmosphere*. Instances of the latter occurrence, it is believed, might be adduced, and satisfactorily substantiated.

If the account here given of the origin of these Miasmatic diseases should be found conformable to truth, it becomes easy to explain the fact of *Koino-miasmatic* epidemics being only observed in warm climates or seasons. We are hence also enabled to explain the reason of Typhus being chiefly a disease of temperate or cold climates, of its generally prevailing in the winter and other cold seasons, and of its appearing so seldom within the tropics. The heat of the human body, being the same in all climates and seasons of the year, must certainly act with more force on the long-retained excretions of the system, adhering to the skin, clothes, bedding and furniture of the indigent and filthy, shut up in their small, low, crowded, uncleanly and unventilated dwellings, in cold climates, or during the cold seasons of the year.

Many physicians, to whose opinions much respect is due, and who firmly hold the doctrine here stated concerning the *Koino-miasmatic* diseases, cannot be induced to give up the notion of the contagiousness of Typhus. As the decision of this question affects a doctrine of great importance, it appears to be justly entitled to attention. But, before entering on the question whether Typhus be a miasmatic or contagious disease, it will be necessary strictly to define what is here meant respectively by contagion and miasma. By contagion is understood a noxious matter, produced by organic action of diseased human bodies, emitted from such bodies or from substances which have been in contact with them, and causing

properly adapted to the purpose. Dr. Cullen gives the following character to his order of *Febres*: "*Prægressis languore, lassitudine, et aliis debilitatis signis, pyrexia, sine morbo locali primario.*" The existence of Fever, according to this description, *without a primary local affection*, appears to be doubtful, if not wholly improbable.



a similar disease in persons to whom it is applied. Of such contagion the small-pox presents the most unequivocal example. By miasma is meant that noxious vapour which emanates from dead animal and vegetable substances, or either of them, undergoing decomposition, and which is the spontaneous result of attractions and repulsions conferred by nature on the elementary particles of which it is composed. Contagion, therefore, is a poison of animal production, and miasma a poison of chemical production.

That the remote cause of Typhus is a miasma or chemical poison, and not a contagion, seems to be proved by its not depending on the disease itself for its origin, but being occasionally generated wherever the requisite circumstances happen to coincide. Dr. Cullen observes (*First Lines*, vol. i. p. 70), "that the effluvia constantly arising from the living human body, if long retained in the same place, without being diffused in the atmosphere, acquire a singular virulence." And again (p. 71): "It is probable that the contagion arising in this manner is not, like many other contagions, permanent and constantly existing; but that, in the circumstances mentioned, it is occasionally generated." Other authorities, if necessary, might be brought in support of this opinion.

This admission is greatly unfavourable, if not fatal, to the doctrine of the contagiousness of Typhus. The occasional generation of the disease *de novo* is proof of its arising without contagion; for contagion being a morbid secretion, cannot exist previously to the disease which engenders it; and if miasma, thus occasionally generated, can produce Typhus, why may not the same agent, by a continued and progressive generation, wherever the materials requisite to its formation exist, go on indefinitely to propagate the disease? To deny this, and to insist on the successive propagation of Typhus by means of contagion, unless clear proof be alleged, is unphilosophical; as it supposes the operation of two causes, when one only is proved to exist, and when that one is sufficient to account for all the phenomena. Many clear cases of the operation of miasmata in producing Typhus, and of the absence of contagion in the same cases, might, if necessary, be adduced. The memorable Black Assizes at Oxford, in 1571, furnish an instance of this. Many of the court and jury were infected by miasmata exhaled from the filthy clothes and persons of the prisoners just brought out from their dungeons, though these prisoners were not sick themselves; and no other persons were afterwards infected by the sick, though

the disease was extremely malignant and fatal. A similar occurrence took place at the sessions of the Old Bailey in 1750.\* And Dr. Haygarth, of Bath, in England, one of the most credulous contagionists of the present time, admits that a typhous patient, removed from the filthy dwelling where the illness was contracted, stripped of infectious clothing, thoroughly washed and cleansed, and then lodged in a spacious and ventilated chamber, seldom or never communicates contagion to the attendants.† This is, in effect, to say that, when all existing miasmata are dispelled, and the means of generating more are precluded, the danger of infection no longer exists. But what effect would washing and ventilating be expected to produce, during the course of the Small-Pox, towards annihilating the contagion?

The practical writers inform us that the contagion of Typhus, as it arises from *fomites*, is more powerful than as it arises immediately from the human body. This fact is easily explained on the supposition of the morbid principle, in this instance, being a miasma chemically constituted; for the more perfect the combination of the elementary particles composing a chemical poison, the more perfect, that is, the more virulent, will the poison be rendered. But on the supposition of the morbid principle of Typhus being an animal poison, secreted by vascular action, the augmented virulence of fomites, as stated with respect to this disease, is altogether inexplicable. Animal poisons are universally in the most active state as they immediately issue from the bodies which produce them. The virus of the Small-Pox is the most active in the moment of taking it in its recent and fluid state; the virus of the Vaccine disease is the same, as is likewise that of a rabid animal, of the viper, &c. Every day that these poisons are kept, they become progressively weaker and weaker, till at length their activity is entirely extinguished. An example of any one of them becoming more virulent by keeping cannot be produced. There is every reason to believe that a chemical action taking place in an animal poison, after its separation from the body, (and this is the kind of action which must take place) has a speedy effect to destroy instead of increasing the virulence. The effects of fermentation on variolous pus seem to establish this conclusion. The result of chemical action on vegetable poisons appears to be the same; and there

\* See Blane's Observations on the Diseases of Seamen, p. 216.

† Letter to Dr. Percival on the Prevention of Infectious Fevers.

is probably no exception among all the virulent matters which are the product of organic nature.

In deciding on the contagiousness of diseases, it is essential to ascertain whether the morbid principle be a matter of animal or chemical production. The miasmatic poisons are unquestionably of chemical origin, formed without any febrile, morbid, or organic action of any kind; and therefore they cannot be confounded with contagions without a gross abuse of terms; and, on the other hand, the animal poisons, or such as are secreted by the vascular energy of the animal body, can alone, with propriety, be denominated contagions.

By considering Typhus as a branch of the Miasmatic diseases, we produce a simplicity, uniformity, and elegant *arrondissement* in the doctrine of fevers, which cannot but recommend it to all who admire the regularity of nature. The error of blending contagiousness with miasmatic poison withdraws men's attention from the noxiousness of personal and domestic filth as well as public nuisances. This is an object to which the care of the community cannot be too frequently or too loudly called. If cleanliness be conducive to decency, comfort, elegance, morality, intellectual activity, and the dignity of human nature, it is likewise eminently so to safety, health and long life.





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 REVIEW.
 

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ART. I. *A Brief Retrospect of the Eighteenth Century. Part first; in two Volumes: containing a Sketch of the Revolutions and Improvements in Science, Arts and Literature during that period. By Samuel Miller, A. M. one of the Ministers of the United Presbyterian Churches in the City of New-York, Member of the American Philosophical Society, and Corresponding Member of the Historical Society of Massachusetts.* 8vo. Vol. i. pp. 544. Vol. ii. pp. 510. New-York. T. & J. Swords. 1803.

THE century which has lately rolled away is replete with memorable events. The condition of the human race has undergone many and considerable alterations within that period, particularly among its more refined and civilized members. Perhaps there has never occurred since the Christian æra a more eventful or instructive lapse of time. In a state of society, when the globe is frequently circumnavigated by vessels of moderate burthen, upon commercial voyages, when colonies are sent forth and planted at the antipodes, and when the effects of the discovery of America have been experienced both here and in the eastern hemisphere for more than three secular ages, there must be much for the historical observer to record.

Placed, as it were, on an eminence between the eighteenth and nineteenth centuries, there has been a boundless field for the beholder to survey. Forward he takes a prospective view, and looks as far as he can along the vista of futurity; and, turning his eyes in the opposite direction, he takes a retrospect of the scenes, and ruminates upon what in reality lies behind him: Situated in this manner between the future and the past, it has been generally found more safe and easy to review the events which have gone by, than to penetrate into those which are to come. Such is the construction of the human mind, that while many men are permitted to be historians, a very small number are allowed to become prophets. With exceptions in favour of the few who have been enriched with the gift of foretelling, and of the larger number who improve daily observation into sagacity or a sort of prescience, we may consider man as ignorant and heedless of the future, and as

either enjoying or suffering the present, or as contemplating the past. The improvement of time present is one of the grand precepts of morality. But as every portion of time past has in its turn been a *now*, the cultivation of even this may be said to be considerably within our power. And there can be scarcely a question, that one of the best methods of enjoying existing moments is by seasonably directing them to the review of those which are no more.

The judicious writer of the performance under consideration has proceeded to execute his task upon this principle. But he has limited his range of observation; and instead of carrying his retrospect to the beginning of time, or the commencement of history, he does not often look far beyond the dawning of the eighteenth century. And, indeed, within that short term, there occur so many events worthy of particular notice, that the two ample volumes before us contain but the *first* part of the entire performance. These are stored with such a variety of scientific and literary treasure, that we hope the author will feel encouragement and strength to continue digging in the precious mine which he has opened, and gratify our earnest expectations of receiving the residue of his intellectual riches.

It appears that the germ of this learned and respectable work was a sermon preached on the first of January, 1801. In the discharge of his professional duty, Mr. Miller, instead of selecting the subjects of address corresponding to the opening of the *new year*, adapted his discourse to the *new century*, which had also that morning been ushered in. A request was made by some of the hearers that it might be printed. This was assented to, and preparations made for carrying it into effect, with some enlargement and illustrations. But he had not proceeded far in his undertaking before he found the materials to be so copious and diversified that the form of a sermon was abandoned, and the composition grew by degrees into the present shape and size. Thus improved and enlarged, Mr. Miller has dedicated it to his friend, the celebrated and patriotic JOHN DICKINSON, Esq.

We have been much delighted by the perusal of this Retrospect. We find in it every where the indications of a clear and discriminating mind. The progress of invention and discovery, in the author's passage from one science to another, is succinctly, but, at the same time, sententiously and methodically pointed out. Nor is his survey of the literature of the last age less perspicuous and striking; for whether he treats of the philosophy of the mind, on classical learning, on gene-

ral history, on romances and novels, or on literary journals as they have appeared during the term of his Retrospect, he is on each topic intelligent. He appears to have had ready and free access to the best sources of information. Much of the dignified and candid spirit of criticism pervades the work, and is frequently manifested by the just commendations given to such writings as are conducive to usefulness and virtue, and by the pointed reflections which are directed against publications whose tendency is either frivolous or immoral.

The appearance of this abridgment of the scientific and literary progress of mankind during the last hundred years, is, in our judgment, very seasonable; and we give it an hearty welcome. It is not only of itself a valuable body of information, but it is also a book of reference to a multitude of things which it does not actually contain. To young persons, it traces out, with plain and masterly strokes, the actual condition and boundaries of knowledge. It may, therefore, be perused by such with peculiar advantage. To those whose situation in life does not permit them to read regularly the periodical modern works, and thereby to keep an even pace with the improvements and projects of the day, this will be found an useful compendium, where, as in a ledger, accounts are methodized and duly posted up. To inquirers of this class it would also seem to be acceptable. In short, the matters contained in it are so abundant, that even those who are well educated, and tolerably versed in fashionable reading, will, we are well persuaded, find herein no small portion of information and entertainment; and both the collegiate and private student, the plain and the scientific reader, may be benefited by a perusal.

We proceed to a more particular exhibition of its contents. They are distributed into twenty-six chapters; to which are subjoined explanatory notes, and a general recapitulation. To these are prefixed a short dedication, preface and introduction.

The first chapter treats of Mechanical Philosophy, under the distinct sections of Electricity, Galvanism, Magnetism, Motion and moving Forces, Hydraulics, Pneumatics, Optics, and Astronomy; and after a comprehensive summary of what has been done in each of these departments, concludes in the following words:

“From the foregoing review, it will appear, that almost every part of mechanical philosophy, during the eighteenth



century, has undergone great and radical improvements; and that the path is evidently marked out to still greater and more interesting attainments. For much of this progress we are indebted to accident; but our obligations are also great to the genius and industry of individuals, and the labours and publications of many learned societies, who have, with honourable zeal and perseverance, encouraged experiments and enterprizes of discovery, and collected and made known a multitude of important facts. It is also a remarkable characteristic of the age, that every branch of natural philosophy has been investigated, in modern times, in a more *practical* manner than ever before, and more extensively and generally applied to purposes of *economy* and the *arts*. While the explorers of science have gratified liberal curiosity, and gained reputation for themselves, their inquiries have been rendered subservient to the abridgment of labour; the increase both of expedition and elegance of workmanship, in manufactures; and the promotion of human comfort, to a degree beyond all former precedent. In short, the number of heads and of hands at work in the various departments of mechanical philosophy, at the close of the century under consideration, was unquestionably much greater than ever before since science was an object of human study. That much further and more satisfactory light, therefore, may be expected to break in upon us, at no great distance of time, on many points at present involved in darkness, can hardly be doubted. 'But the subject,' says an eloquent writer, 'is still greater than our exertions, and must for ever mock the efforts of the human race to exhaust it. Well did Lord Bacon compare natural philosophy to a pyramid; its basis is indeed the history of nature, of which we know a little, and conjecture much; but its top is, without doubt, hid high among the clouds. It is *the work which God worketh from the beginning to the end*, infinite and inscrutable!'"\*

The ensuing remarks of Mr. M. occur towards the end of his second chapter, which contains the retrospect of Chemical Philosophy:

"From the above general statements, it appears that, within the last half century, the empire of chemistry has been wonderfully extended. It is but a short time since this science recognized, as the subjects of her sway, only a few *metals* and *medicines*. She has lately subjected to her sceptre the various

\* "Bishop Watson's Chemical Essays, vol. i. p. 15."

kinds of *earths* found in the composition of our globe; the different *fluids* with which we are conversant, whether of the *aqueous* or *gaseous* form; the various kinds of *vegetable*, *animal*, and *mineral* bodies which surround us; and almost every substance capable of composition or analysis. In short, she has extended her claims to every species of *animate* and *inanimate* matter, and maintains authority over a territory of physical science which may be called immense, when compared with her former dominions.

“But chemistry has not only gained, during the eighteenth century, a great extent of empire; it is also distinguished for having acquired, in the same period, a more *practical* and *useful* cast than ever before. By the ancient cultivators of this science it was chiefly regarded as an object of *curiosity*, or as a source of *amusement*. But in the hands of later chemists it has been converted into a most instructive, interesting, and invaluable science. There is scarcely an art of human life which it is not fitted to subserve; scarcely a department of human inquiry or labour, either for health, pleasure, ornament, or profit, which it may not be made, in its present improved state, eminently to promote.

“To the *husbandman* this science furnishes principles and agents of inestimable value. It teaches him the *food* of plants; the choice and use of *manures*; and the best means of promoting the vigour, growth, productiveness, and preservation of the various vegetable tribes. To the *manufacturer* chemistry has lately become equally fruitful of instruction and assistance. In the arts of *brewing*, *tanning*, *dyeing*, and *bleaching*, its doctrines are precious guides. In making *soap*, *glass*, *pottery*, and all *metallic* wares, its principles are daily applied, and are capable of still more useful application as they become better understood. Indeed, every mechanic art, in the different processes of which heat, moisture, solution, mixture, or fermentation are necessary, must ever keep pace in improvement with this branch of philosophy. To the *physician* this science is of still greater value, and is daily growing in importance. He learns from it to compound his medicines; to disarm poisons of their force; to adjust remedies to diseases; and to adopt the general means of preserving health. To the student of *natural history* the doctrines of chemistry furnish instruction and assistance at every step of his course; as many of his inquiries can be prosecuted with success only through the medium of careful analysis. To the *public economist* chemistry presents a treasure of useful information. By means

of this science alone can he expect to attack with success the destroying pestilence, so far as it is an object of human prevention, and to guard against other evils to which the state of the elements gives rise. And in order to the prosecution of numberless plans of the philanthropist to any extent or effect, some acquaintance with the subject in question seems indispensably necessary. Finally, to the *domestic economist* this science abounds with pleasing and wholesome lessons. It enables him to make a proper choice of *meats* and *drinks*; it directs him to those measures with respect to *aliment*, *cookery*, *clothing*, and *respiration*, which have the best tendency to promote health, enjoyment, and cheapness of living; and it sets him on his guard against many unseen evils, to which those who are ignorant of its laws are continually exposed. In a word, from a *speculative* science, chemistry, during the eighteenth century, has become eminently and extensively a *practical* one; from an obscure, humble, and uninteresting place among the objects of study, it has risen to a high and dignified station; and instead of merely gratifying curiosity, or furnishing amusement, it promises a degree of utility of which no one can calculate the consequences, or see the end.

“But while the great improvements which have been made in *chemical* philosophy during the last century are readily admitted, it may not be improper, before closing this chapter, to take notice of the gross abuses which have been adopted by some of the most celebrated cultivators of the science in question, and which have contributed to lessen its value in the view of many serious inquirers. A few extravagant and enthusiastic votaries of chemistry have undertaken, on chemical principles, to account for all the phenomena of *motion*, *life*, and *mind*; and on those very facts which clearly prove wise design, and the superintending care of an INFINITE INTELLIGENCE, have attempted to build a fabric of *atheistical* philosophy. This is a remarkable instance of those *oppositions of science falsely so called*, of which an inspired writer speaks, and for which the past age has been remarkably distinguished.

“How far the present fashionable system of chemical doctrine and language may stand the test of future experiments, and command the assent of future generations, is far from being certain. He who has attended to the course of things in the short space of time since it was published, will see little reason to expect for it that undisturbed and permanent reign which its advocates have fondly hoped. It is somewhere



remarked by Lord Bacon, that the sciences are apt to suffer by being too soon reduced to a system. There are probably few sciences to which this remark applies with such peculiar force as to chemistry. The structure at present most popular is fair and beautiful. An engaging simplicity reigns in almost every part. But many believe that this simplicity is deceptive. Some of the doctrines which hold an important place in the fabric are too vague and conjectural to be admitted with full confidence, and others are daily undergoing modifications, which threaten still further and more essential changes. Notwithstanding the mathematical precision with which the sanguine chemist affects to speak of his axioms, yet how discordant are the results of different experiments! These facts, it must be acknowledged, 'betray the lameness of some received principles, and excite suspicions with respect to the legitimacy of some capital analyses.' But the enlightened and enterprising philosopher will not be discouraged by such proofs of the imperfection of human knowledge. The builders of erroneous systems become indirectly the promoters of truth, by contributing to the examination and rejection of falsehood. We can only hope, in the present world, to be continually approximating toward the point of complete philosophic illumination, without ever reaching it; and this approximation must always be made through successive defiles of illusion, empiricism, and false theory. In this course honesty, attention, and patient perseverance, are the great requisites for obtaining success. With these, though we cannot expect to develop all the mysteries of nature, which is the prerogative of its Author alone; yet we may hope, in time, to detect analogies, to ascertain laws, to systematize scattered facts, and to unlock treasures of science, which appear at present far removed from human scrutiny, and against the knowledge of which the feebleness of our powers seems to raise everlasting barriers."

Natural History is considered in the third chapter, under the different heads of Zoology, Botany, Mineralogy, Geology, Meteorology, and Hydrology. These are each touched with a skilful hand; and from the fourth of them we extract the following remarks, which Mr. M. offers on theories of the earth: (p. 184.)

"But although there has been, in modern times, as appears from the foregoing pages, a wonderful variety of fanciful productions, under the name of geological theories, we are by no means to imagine that little has been usefully done in this

department of natural history. Amidst all the splendid rubbish with which it has been incumbered, some precious treasures have been brought to light. Amidst the speculations which have *darkened counsel*, large additions have been made to our knowledge of this important subject. These may be briefly summed up in the following particulars.

"The *materials* for the formation of a correct and rational theory of the earth have been greatly augmented during the last age. Enlightened mineralogists, practical miners, and patient chemical experimenters, have been engaged, throughout the century, in making accurate observations; in visiting foreign countries; in exploring the bowels of the earth; in comparing the strata of every portion of the globe; in examining their form, direction, extension, and connection; in analyzing their component parts; and in collecting a multitude of facts, which have all tended to throw light on the origin and history of our planet. By means of the useful discoveries which these inquirers made, we have been furnished with weapons for beating down false theories, and with information enabling us to pursue our investigations further, and with more advantage. 'In this magnificent display of the internal arrangement of the globe,' says Mr. Kirwan, 'many philosophical observers acquired distinguished eminence from tedious, laborious, painful, but successful exertions. Tilas, Gmelin, Cronstedt, Ferber, Pallas, Charpentier, Born, Werner, Arduino, De Luc, Sausure, and Dolomieu, are names consecrated to immortality.'\*

'So numerous, indeed,' says the same respectable writer, 'have been the more modern geological researches, that since the obscuration or obliteration of the primitive traditions, strange as it may appear, no period has occurred so favourable to the illustration of the original state of the globe as the present, though so far removed from it. At no period has its surface been traversed in so many different directions, or its shape and extent, under its different modifications of earth and water, been so nearly ascertained, and the relative density of the whole so accurately determined, its solid constituent parts so exactly distinguished, their mutual relation, both as to position and composition, so clearly traced, or pursued to such considerable depths, as within these last twenty-five years. Neither have the testimonies that relate to it been ever so cri-

\* "Geological Essays. Preface. It is a curious fact, that while some of these celebrated inquirers embraced geological principles unfriendly to revelation, they have all brought to light facts, and given views of the subject, which remarkably confirm the sacred history."

tically examined and carefully weighed, nor, consequently, so well understood, as within the latter half of the past century.\*

"Difficulties have been lately removed, which were once supposed, by some, to militate strongly against the *possibility* of a *general deluge*. Early geologists, for want of accurate information, supposed that all the waters of the globe were not sufficient to cover the whole earth to such a depth as the sacred historian describes. It was asserted that the mean depth of the ocean did not exceed a quarter of a mile, and that only half of the surface of the globe was covered by it. On these data, Dr. Keil computed that *twenty-eight* oceans would be requisite to cover the whole earth to the height of *four miles*, which he judged to be that of the highest mountains; a quantity which, at that time, was utterly denied to exist. But further progress in mathematical and physical knowledge has since shown, that the different seas and oceans contain at least *forty-eight* times more water than they were supposed to do, and much more than enough for the extent ascribed to the deluge in the sacred history.†

"While difficulties which were supposed to render the deluge *impossible* have been removed, by the investigations of modern philosophers, many facts have been, at the same time, brought to light, showing the *probability*, and even *certainly*, of that mighty inundation. In every valley and mountain support for revelation has been found. *Marine shells* have been discovered in situations so elevated, and under circumstances so remarkable, as to prove that they were left there by a flood extending over the whole globe; and what confirms this conclusion is, that shells, peculiar to different shores and climates, very distant from each other, have been found in promiscuous heaps, plainly showing that they could have been brought together only by an extensive inundation. The

\* "Geological Essays, p. 3, 4."

† "M. De La Place (whose mathematical and astronomical skill will not be questioned, and whom none will suspect of a disposition to press facts unduly into the support of revelation) has demonstrated, by a strict application of the theory of tides, to the height to which they are known to rise in the main ocean, that a depth of water reaching only to *half a league*, or even to *two or three leagues*, is utterly incompatible with the Newtonian theory, and that no depth less than *four leagues* can possibly be reconciled with the phenomena. It will be readily perceived that this is much more than the Mosaic history requires. The extent of that part of our globe which is covered by water is now known to be far greater than Keil supposed it; it being ascertained that nearly two-thirds of the surface of the earth are in this situation.—*Kirwan's Geological Essays*, p. 66, 67."



bones of *elephants* and of *rhinoceri* have been found, in a multitude of instances, far distant from the regions in which they were found to live, and where, from the nature of the climate, they could never exist in the living state: and between the climates which they might have inhabited, and the places in which they are now found, too many mountains intervene to suppose them carried thither by any other means than a *general deluge*.\* The most patient and accurate examinations of detached mineral substances, and of the strata of the globe, which late inquirers have made, afford every reason to believe, that the earth was, for a considerable time, wholly overflowed with water. And, to crown all, as voyagers and travellers have explored new regions of the earth, they have found, every where, the indications of geological phenomena confirmed and supported by the notices of tradition. Accordingly, it is very remarkable, that a great majority of modern theorists have embraced the *Neptunian* doctrines; and even such of them as rejected the Mosaic account of the deluge have been compelled to seek for other means of immersing the present continents in the ocean.†

“Finally, the researches of modern geologists have given abundant confirmation to the sacred history, not only with respect to the general *deluge*, but also with regard to the *age* of the earth.‡ Early in the century, and, indeed, until within

\* “Kirwan’s Geological Essays, p. 54; et seq.”

† “M. Bailly, of France, at first embraced the theory of the earth proposed by Buffon; but finding the evidence arising from the investigations of natural history, and from universal tradition, so strongly to attest the reality of the general deluge, he abandoned that delusive theory, and took refuge in another system, in which he recognizes the deluge, and only contends for placing it as far back as three thousand five hundred years before Christ.”

‡ “Sir William Hamilton and Mr. Ferber particularly applied themselves to the study of *volcanoes*, without giving general systems. They affirmed that the indications furnished by subterraneous and volcanic phenomena, and particularly by the beds of lava, announce the antiquity of the earth to be far greater than the sacred history represents it. But they did not advert to the fact, that all lavas are not composed of the same substance. All have not undergone the same degree of vitrification, and, of course, are more or less susceptible of decomposition. And even when their composition is the same, much depends on the state in which they are emitted. When poured from the crater in the fermentation of boiling liquefaction, a *scoria* or dross rises, like broken waves on the surface, and is easily pulverized by the air and weather. When the heat is less violent, or when the torrent is cooled in its course, an even and almost impenetrable surface defies the influence of the atmosphere. These philosophers do not recollect that *Herculaneum*, the date of whose destruction is well known, is covered by nearly *seventy* feet of lava, interspersed with *seven*

a few years, several geological phenomena were considered, by superficial inquirers, as indicating that the creation of the globe we inhabit was an event much more remote than the sacred history represents it; and some theorists even went so far as to profess a belief that it existed from eternity. These opinions were kept in countenance only as long as geology was in its infancy. Every successive step which has been lately taken in the improvement of this science has served to show their fallacy. The investigations of the latest and most accurate philosophers have afforded proof little short of demonstration, that the earth, at least in its present form, cannot have existed longer than appears from the Mosaic account; the absolute falsehood of many positive assertions, and specious inferences, hostile to the scripture chronology, has been evinced; and thence has arisen a new presumptive argument in support of the authenticity of that volume, which contains the most ancient, and the most precious of all records."

The fourth chapter is devoted to an Inquiry into the Progress of Medicine during the last century. It is distributed into five separate articles, viz. Anatomy, Physiology, Theory and Practice of Physic, Surgery and Obstetrics, and Materia Medica. The examination is extended to considerable length, and is executed in a manner at least equal, if not superior, to any part of the work. The medical tyro, as well as the gentleman of general reading, may peruse this part of Mr. M.'s Retrospect with singular advantage. As a specimen of the author's research on this subject, we cite the part in which he treats of medical improvement in Fredonia. (p. 316.)

"The cultivation and progress of medical science in the United States deserves some attention before closing this chap-

distinct seams of friable earth; and the whole covered with good soil; yet all this has been the undoubted production of less than *eighteen hundred years*.—Howard's Thoughts on the Globe.

"In like manner, Count Borch, in his *Letters on Sicily and Malta*, professes to believe that *Ætna* is at least eight thousand years old, which he infers from the beds of vegetable earth which he discovered between different beds of lava. Yet M. Dolomieu, who has greatly distinguished himself by the acuteness and success of his geological inquiries, expressly tells us that such earth *does not exist* between the beds of lava of which the Count speaks, and thus destroys the foundation of his whole argument. But even if vegetable earth were found in the circumstances supposed, no conclusion relative to its age could fairly be deduced from this fact, as some lavas become fertile much sooner than others. The Chevalier Gioanni, in 1787, found lavas, projected in 1766, in a state of vegetation, while other lavas, known to be much more ancient, still remained barren.—*Kirwan's Geological Essays*, p. 104 105."

ter. It is to be lamented that the want of suitable documents renders a full and satisfactory view of this part of the retrospect impossible. For though little was done in our country for the science of medicine, until within the last forty years; yet of a considerable portion of that little the knowledge is either totally lost, or preserved only in that vague and indistinct manner in which traditional records are usually presented.

"During the greater part of the century under review, and especially the early periods of it, medical science was cultivated with most success in the Middle and Southern States. This was, probably, among other circumstances, chiefly owing to the following causes. In those States many of the physicians were Europeans, who had enjoyed all the advantages of the best schools of physic. It was more common among them than in the Eastern States, owing to the greater wealth of the former, to send young gentlemen to complete their medical education in foreign universities. A taste for researches in natural history also appeared, in a number of instances, particularly in the States of *South-Carolina, Virginia, Pennsylvania, and New-York*, long before a similar taste was formed to the eastward; and the tendency of such pursuits to enlighten the minds, and extend the inquiries of physicians, is too obvious to require elucidation.

"One of the earliest publications in America\* on a medical subject, was an essay on the *Iliac Passion*, by Dr. Cadwallader, a respectable physician of Philadelphia, printed about the year 1740, in which the author opposes, with considerable talents and learning, the then common mode of treating that disease.† About the same time, Dr. Tennant, of Virginia, published a small work on the *Pleurisy*, in which he

\* "Before this, William Bull, the first native of South-Carolina, and probably among the first natives of America, who obtained a degree in medicine, defended and published, in 1734, at the University of Leyden, his inaugural thesis, *De Colica Pictorum*. He was a pupil of the great Boerhaave; and is quoted by Dr. Van Swieten, in the following very respectful terms: *Hæc Colica in regionibus Americæ meridionalibus tam frequens est, ut fere pro morbo endemio haberi possit; uti ab eruditissimo viro Gulielmo Bull, in his oris nato, et nunc feliciter ibi medicinam exercente, sæpius audivi, qui et pulchram de hoc morbo scripsit dissertationem inauguralem, quam in Academia Lugduno Batava defendit anno 1734.—Vide Gerardi L. B. Van Swieten Comment. tom. iii. p. 357.*"

† "For several of the names and facts here stated, respecting the early medical writers of America, the author is indebted to the *Review of the Improvements of Medicine*, by Dr. Ramsay, of Charleston, before quoted. The learning and talents displayed by this gentleman, both as an historian and medical philosopher, entitle him to a distinguished place among the benefactors and ornaments of his country."



brought into view the virtues of the seneca snake-root, which were before unknown. Not long afterwards, Dr. John Mitchel, of Virginia, published an ingenious *Essay on the Causes of the different Colours of People in different Climates*, in which he displayed much anatomical and other learning.\* About the middle of the century, Dr. Thomas Bond, an eminent physician of Philadelphia, drew up some useful medical memoirs, which were published in a periodical work in London.† Nearly cotemporary with the last mentioned publications, were several by Dr. Benjamin Gale, a practitioner of medicine in Connecticut, who was much distinguished among his countrymen for his acquirements and skill, and who particularly published a *Dissertation on the Inoculation of the Small-Pox in America*, which has been often mentioned respectfully.‡ In 1753 Dr. John Lining, of South-Carolina, published an accurate history of the American *Yellow Fever*, which was the first that was given to the world from our continent. Dr. Lionel Chalmers, of the same State, in 1754, communicated to the Medical Society of London some useful remarks on *Opisthotonus* and *Tetanus*, which were published in the first volume of their *Observations and Inquiries*. This gentleman also published, in 1767, an *Essay on Fevers*, in which he gave the outlines of the *spasmodic theory*, which had been before taught by Hoffman, and was afterwards more fully illustrated by Cullen. In 1764 Dr. Garden, a scientific physician of South-Carolina, before mentioned, presented to the public an account of the medical properties of *Pink-Root*, and gave, at the same time, a botanical description of the plant. About the same time, Dr. Colden, and Dr. Jacob Ogden, both of New-York, published some valuable observations on a species of *Sore Throat*, which was then prevalent and mortal. The former of these gentlemen also made medical communications on other subjects, which were

\* "This Essay was sent to Mr. Collinson, of Great-Britain, and was intended as a solution of the prize problem on that subject, announced by the *Academy of Bourdeaux*. It was afterwards published in the *Philosophical Transactions*, vol. xliii. p. 102—150. Dr. Mitchel also wrote ably on the *Yellow Fever*, as it appeared in Virginia in 1742. His instructive manuscripts on this subject fell into the hands of Dr. Franklin, by whom they were communicated to Dr. Rush.—See Rush on *Yellow Fever*, 8vo. 1794."

† "Medical Observations and Inquiries, vols. i. and ii."

‡ "It is possible that other medical publications were made in New-England, about this time, equally worthy of notice; but the author has not been so fortunate as to see or hear of them."

esteemed.\* To this list may be added Dr. John Jones, also of New-York, who was greatly distinguished as a surgeon, and who published a work on *Wounds and Fractures*, which is an honourable monument of his learning and professional skill.

“ Though these physicians were not all of them natives of America; and though their publications were generally small, and cannot be said to be of much value at the present day; yet, considered as indications of a growing taste for medical inquiries, and as among the means of exciting, in a young country, a thirst for knowledge, and an ambition for the attainment of medical fame (as examples of which alone they are mentioned), they doubtless deserve respectful notice in this sketch. They contributed to bring the American practitioners of the healing art, scattered over an immense territory, better acquainted with each other, and, doubtless, concurred with other circumstances, to forward the plans of association and instruction which soon began to take place.

“ About the year 1762 Dr. William Shippen, and Dr. John Morgan, both natives of Pennsylvania, and youthful friends, who had gone to the University of Edinburgh to complete their medical education, and who had received its honours, met in London, whither they had repaired for the purpose of receiving instruction from the large hospitals, and excellent teachers of that city. They there agreed to attempt the establishment of a Medical School in Philadelphia. Accordingly, in the year 1764, Dr. Shippen gave the first course of lectures upon *Anatomy* that ever was delivered in America. In 1765 Dr. Morgan laid before the trustees of the College of Philadelphia a plan for teaching all the branches of medicine, and conferring Medical degrees. This plan was adopted; Dr. Shippen was recognized as Professor of *Anatomy*, and Dr. Morgan was appointed Professor of the *Institutes of Medicine*, and soon afterwards began to teach them. In the year 1768 Dr. Adam Kuhn, who had studied under the celebrated Linnæus, was appointed Professor of *Botany*, and of the *Materia Medica*; and in 1769 Dr. Benjamin Rush, who had just completed his medical studies in Europe, was chosen Professor of *Chemistry*. To these gentlemen was added Dr. Thomas Bond, who was selected to give *Clinical Lectures* on the

\* “ Dr. Colden is the gentleman before mentioned as Lieutenant-Governor of New-York, and as having distinguished himself by his knowledge of *Astronomy* and *Botany*.”

cases of disease in the Pennsylvania Hospital. The first American Medical School, thus organized, became the resort of students from every part of the then colonies: It has since undergone considerable changes, by the death and resignation of Professors, and new appointments; but continues to flourish; and will now bear a very honourable comparison, at least with regard to the talents and learning of its Professors, with the most respectable institutions of a similar kind in Europe.

"In 1764 Dr. Shippen lectured to *ten* students. In the season of 1801-2 the number of students attending the different Medical Professors amounted to *one hundred and thirty*, of whom *twenty-one* were admitted to the degree of Doctor of Medicine.

"The laudable example set by the physicians and college of Philadelphia, soon excited the zeal of the physicians of New-York to establish a Medical School in *King's College*; accordingly, in 1767, a letter was addressed to the governors of that institution, by Drs. Samuel Clossey, Peter Middleton, John Jones, James Smith, Samuel Bard, and John V. B. Tennent, urging the propriety and importance of attempting to form a plan of medical instruction, and offering their services for carrying it into effect. In consequence of this letter the governors, a few days afterwards, elected Dr. Clossey Professor of *Anatomy*, Dr. Middleton Professor of *Physiology* and *Pathology*, Dr. Jones Professor of *Surgery*, Dr. Smith Professor of *Chemistry* and *Materia Medica*, Dr. Bard Professor of the *Theory and Practice of Physic*, and Dr. Tennent Professor of *Midwifery*. In 1770, in consequence of the death of Dr. Tennent, and the removal of Dr. Smith out of the province, the office of instruction in *Materia Medica* was committed to Dr. Middleton, and *Chemistry* to Dr. Bard. Lectures were regularly given by the above named gentlemen; but no medical degrees had been conferred by the college, when the revolutionary war entirely deranged, and, in effect, destroyed the whole establishment.

"In 1784 the regents of the University made an attempt to revive the Medical School, and went so far as to appoint several Professors in *Columbia College* (the new style by which *King's College* became known on the change of government), for the purpose of pursuing the former plan of instruction. But the gentlemen so appointed did not all deliver lectures; the courses actually given were short and incomplete, and the undertaking languished, and finally fell to the ground.

"After several other ineffectual attempts to establish a



course of medical instruction in the city, the trustees of Columbia College, in 1792, organized the school on its present plan, and commenced a course, which has succeeded better than any former attempt. The Faculty of Physic, as then constituted, consisted of Dr. Samuel Bard, *Dean*; Dr. Wright Post,\* Professor of *Anatomy*; Dr. William Hamersley, Professor of the *Institutes of Medicine*; Dr. John R. B. Rodgers, Professor of *Midwifery*; Dr. Nicholl, Professor of *Chemistry*; Dr. Richard Kissam, Professor of *Botany*; and Dr. Richard Bayley, Professor of *Surgery*. These gentlemen, the greater number of whom had received a regular medical education in Europe, soon commenced the several departments of instruction assigned to them. The first medical degrees were conferred by this institution in 1793; and though it has not grown so rapidly as might have been expected, from the learning and talents of its Professors, yet it holds a respectable station, and has rendered very important services to the interest of medical science in the State.

"The third Medical School established in the United States, is that in the University of Cambridge, Massachusetts. This institution took its rise from the benefactions of several enlightened and liberal persons, who were desirous of promoting the knowledge of medical science. Dr. Ezekiel Hersey, an eminent physician of Hingham, in that State, who died in 1770, bequeathed one thousand pounds, Massachusetts currency, to be applied to the support of a Professor of *Anatomy* and *Surgery*. His widow, at her death, left a like sum, to be devoted to the same object. His brother, Dr. Abner Hersey, of Barnstable, and Dr. John Cumming, of Concord, left each five hundred pounds, to be also applied to the encouragement and support of medical instruction.† These generous donations were aided by that of William Erving, Esq. an opulent gentleman of Boston, who, a few years afterwards, gave

\* "By means of the zeal and enterprize of Professor Post, Columbia College is possessed of a valuable collection of *Anatomical Preparations*, to complete which that accomplished anatomist made two voyages to Europe. It is believed that this is the first collection of the kind introduced into the United States, and certainly the best."

† "These several sums, amounting to three thousand pounds, Massachusetts currency, are funded, and their annual proceeds equally divided between the Professors of *Anatomy* and *Surgery*, and of the *Theory and Practice of Physic*; each of which Professorships bears the name of Hersey."

one thousand pounds towards the support of an additional Professor.\*

“ Though the first of the benefactions above stated was made some time before the commencement of the revolutionary war, yet nothing effectual was done toward executing the will of these public spirited donors till near the close of it. In 1781 Dr. John Warren began to lecture in Boston on *Anatomy and Surgery*, and prosecuted his plan for two seasons. In 1783 the government of the University of Cambridge proceeded to organize a regular Medical School, when Dr. Warren was appointed Professor of *Anatomy and Surgery*, Dr. Benjamin Waterhouse Professor of the *Theory and Practice of Physic*, and Dr. Aaron Dexter Professor of *Chemistry and Materia Medica*. Since that period these gentlemen have regularly delivered lectures on the several branches assigned to them; and though the number of students who usually attend them is comparatively small, yet they are annually increasing; and the erudition and talents of the Professors afford a satisfactory pledge that the institution will, at no distant period, reach a much higher station both of respectability and usefulness.

“ The fourth and last Medical School formed in the United States, is that connected with *Dartmouth College*, in the State of New-Hampshire. This establishment, for instruction in medicine, was founded in the year 1798; when Dr. Nathan Smith was appointed Professor of *Medicine*, to lecture on *Anatomy, Surgery, Midwifery*, and the *Theory and Practice of Physic*; and Dr. Lyman Spalding Professor of *Chemistry and Materia Medica*. A considerable number of young gentlemen have attended the lectures, and several have received the honours of this institution.

“ The establishment of Medical Schools in the United States may be considered as forming a grand era in our national progress, and as producing important effects on the character of our physicians. The happy influence of these institutions has also been much aided by the formation of *Medical Societies* in almost every State, which have all come into being within the last forty years. The effect of such establishments in exciting a thirst for the acquisition of knowledge; in producing a spirit of generous emulation; in cultivating a taste for observation

\* “ The bequest of Mr. Erving was exclusively devoted by him to the support of a professorship of *Chemistry and Materia Medica*. This professorship also bears the name of its first and principal benefactor.”

and inquiry; and in combining the efforts and the skill of physicians in every part of our country, must be obvious to every attentive mind. Many of the inaugural theses, defended and published by the students in the American Medical Schools, would be considered as honourable specimens of talents and learning in the most renowned universities of Europe.\*

"Within the last fifteen years of the century under review, medical publications have greatly multiplied in the United States; many of which do equal honour to their authors and our country. Among these the numerous and valuable works of Dr. Rush hold the first place; and to no individual are we more indebted for promoting, both by precept and example, that laudable and enlightened zeal for medical improvements, which has been so happily increasing, for a number of years past, among American physicians. In a catalogue of our medical writers also, Drs. Maclurg, Mitchill, Barton, Ramsay, Caldwell, Currie, and several others, would be entitled to particular notice, did not the limits of the present sketch forbid an attempt to do justice to their respective merits."

*(To be continued.)*

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ART. II. *An Account of Louisiana; being an Abstract of Documents in the Offices of the Departments of State and of the Treasury.* 8vo. pp. 48. with an Appendix of 90 pages.

**B**Y virtue of a negociation concluded at Paris on the 30th of April, 1803, Louisiana was ceded to the United States, and annexed to Fredonia, for the consideration of eleven millions two hundred and fifty thousand dollars, in six per cent. stock, paid to the government of France, and three millions seven hundred and fifty thousand dollars in specie, payable to our citizens who have unsatisfied claims against France. The whole of the purchase money, amounting to fifteen millions of dollars, was covenanted to be paid by several acts of Congress, passed in consequence of the ratification of the treaty and conventions aforesaid. Possession was peacefully taken of New-

\* "Within the last ten or twelve years, all the Medical Schools in the United States have concurred in permitting their medical graduates to write and defend their inaugural dissertations in the English language. Whether this is to be considered as an improvement, or a literary retrocession, is a question which it is proposed to discuss in another place."



Orleans, and of the rest of this country, on the 20th Dec. 1803, after a formal transfer, first from the Spaniards to the French, and then by the latter to the Fredes.

The publication now before us is understood to possess genuine and authentic information. It was laid before Congress in November last, by direction of the President of the United States, as a body of documents to aid the deliberations then going on in the two houses. The information it contains was in a good degree derived from intelligent persons in that country, who were requested by the Executive to collect and transmit it to the seat of government. It may, therefore, be relied on as the most useful and modern account of Louisiana extant.

This newly acquired dominion is mentioned in the following terms.

"Of the province of Louisiana no general map, sufficiently correct to be depended upon, has been published, nor has any been yet procured from a private source. It is indeed probable, that surveys have never been made upon so extensive a scale as to afford the means of laying down the various regions of a country which, in some of its parts, appears to have been but imperfectly explored.

*"Boundaries.*

"The precise boundaries of Louisiana, westwardly of the Mississippi, though very extensive, are at present involved in some obscurity. Data are equally wanting to assign with precision its northern extent. From the source of the Mississippi, it is bounded eastwardly by the middle of the channel of that river to the 31st degree of latitude: thence it is asserted upon very strong grounds, that, according to its limits when formerly possessed by France, it stretches to the east as far, at least, as the River Perdido, which runs into the Bay of Mexico, eastward of the River Mobile.

"It may be consistent with the view of these notes to remark, that Louisiana, including the Mobile settlements, was discovered and peopled by the French, whose monarchs made several grants of its trade, in particular to Mr. Crosat, in 1712, and, some years afterwards, with his acquiescence, to the well known company projected by Mr. Law. This company was relinquished in the year 1731. By a secret convention on the 3d November, 1762, the French government ceded so much of the province as lies beyond the Mississippi, as well as the island of New-Orleans, to Spain, and, by the treaty of peace

which followed in 1763, the whole territory of France and Spain eastward of the middle of the Mississippi to the Iberville, thence through the middle of that river, and the lakes Maurepas and Ponchartrain, to the sea, was ceded to Great-Britain. Spain having conquered the Floridas from Great-Britain during our revolutionary war, they were confirmed to her by the treaty of peace of 1783. By the treaty of St. Ildefonso, of the 1st of October, 1800, his Catholic Majesty promises and engages, on his part, to cede back to the French Republic, six months after the full and entire execution of the conditions and stipulations therein contained relative to the Duke of Parma, 'the colony or province of Louisiana, with the same extent that it actually has in the hands of Spain, that it had when France possessed it, and such as it ought to be after the treaties subsequently entered into between Spain and other states.' This treaty was confirmed and enforced by that of Madrid, of the 21st March, 1801. From France it passed to us by the treaty of the 30th of April last, with a reference to the above clause, as descriptive of the limits ceded.

*" Divisions of the Province.*

"The province, as held by Spain, including a part of West-Florida, is laid off into the following principal divisions:—Mobbille, from Balise to the city, New-Orleans and the country on both sides of Lake Ponchartrain, first and second German coasts, Catahanose, Fourche, Venezuela, Iberville, Galvez-Town, Baton-Rouge, Ponte Coupee, Atacapas, Opelousas, Ouachita, Avoyelles, Rapide, Natchitoches, Arkansas, and the Illinois.

"In the Illinois there are commandants at New-Madrid, St. Genevieve, New-Bourbon, St. Charles and St. Andrews, all subordinate to the Commandant-General.

"Baton-Rouge having been made a government subsequently to the treaty of limits, &c. with Spain, the posts of Manchac and Thompson's Creek, or Feliciana, were added to it.

"Chapitoulas has sometimes been regarded as a separate command, but is now included within the jurisdiction of the city. The lower part of the river has likewise had occasionally a separate commandant.

"Many of the present establishments are separated from each other by immense and trackless deserts, having no communication with each other by land, except now and then a

solitary instance of its being attempted by Hunters, who have to swim rivers, expose themselves to the inclemency of the weather, and carry their provisions on their backs for a time proportioned to the length of their journey. This is particularly the case on the west of the Mississippi, where the communication is kept up only by water, between the capital and the distant settlements; three months being required to convey intelligence from the one to the other by the Mississippi. The usual distance accomplished by a boat in ascending is five leagues per day. The rapidity of the current, in the spring season especially, when the waters of all the rivers are high, facilitates the descent, so that the same voyage by water which requires three or four months to perform from the capital, may be made to it in from twelve to sixteen days. The principal settlements in Louisiana are on the Mississippi, which begins to be cultivated about twenty leagues from the sea, where the plantations are yet thin, and owned by the poorest people. Ascending, you see them improve on each side, till you reach the city, which is situated on the east bank, on a bend of the river, thirty-five leagues from the sea."

In addition to the foregoing limits, it may be observed, that some persons have asserted, with great confidence and appearance of probability, that the western boundary of Louisiana was the Pacific Ocean, and its northern limit was the British territory or claim, reaching westward from Canada and Hudson's Bay to the South-Sea, in a direction from the Lake of the Woods to a spot somewhere south of Nootka-Sound; while the provinces of California and New-Mexico, with the territories lying to the northward of them, and in actual possession of Spain, formed the southern frontier of this vast country. Louisiana was thus construed to extend quite through to the great water on the west, and to embrace all the space not actually claimed or possessed by Great-Britain on the one part, and by Spain on the other.

But this construction has been thought to be rather extravagant. Without straying through the immense regions which lie to the westward of the Shining Mountains that divide the rivers and streams, sending some to the Atlantic and others to the Pacific, we may content ourselves with a more moderate, and, perhaps, more rational estimate of the extent of Louisiana. It may fairly be considered as beginning at the Bay of St. Bernard, in the Gulf of Mexico, and running northwardly and eastwardly along it to the Bay of Perdido, which



is about half way between Mobile and Pensacola, and thence up the River Perdido to the 31st degree of N. lat. thence on that line to the Mississippi, and along the middle of that river to the White-Bear Lake, or other higher source of it. From this head of the Mississippi it may be understood to extend along the mountains or high grounds dividing the waters which run into the upper lakes and Hudson's Bay from those which descend through the Mississippi to the Gulf; and thence along the great chain of Shining Mountains, or Back-Bone of North-America, until it reaches the mountains of Santa Fè. Within these boundaries are included the Missouri, the Arkansas, the Black River, the Red River, and the other vast and unknown streams, with all their waters, which glide down the extensive side-hill or inclined plain situate between the before-mentioned chains of mountains and the bed or valley of the Mississippi. The mountains which divide the waters of the Red River from those of the Rio del Norte, or Bravo, are a formidable natural barrier, and extend eastwardly almost as far as the head of the Rio Adais, or Mexicano. Whether it will be just and politic to extend our claim from the source of the *Red River* across this ridge of mountains to the head of the *Bravo*, and down its channel to the Gulf of Mexico, or to travel along, with more moderate desires, the northern foot of these hills, to the head of the *Mexicano*, and thence down its stream to the sea, are questions of a weighty nature. We shall not pretend to decide them at present, but leave them to be adjusted hereafter by treaties and national discussions.

After an enumeration of the various stations and settlements from Chapitoulas, in the low country of Orleans, to the settlements of St. Genevieve, St. Louis, St. Charles, and St. Andrew, on and near the junction of the Missouri with the Mississippi, the narrator proceeds to describe Upper Louisiana in the following terms. (p. 8.)

*“ General Description of Upper Louisiana.*

“ When compared with the Indiana Territory, the face of the country in Upper Louisiana is rather more broken, though the soil is equally fertile. It is a fact not to be contested, that the west side of the river possesses some advantages not generally incident to those regions. It is elevated and healthy, and well watered with a variety of large rapid streams, calculated for mills and other water works. From Cape-Girardeau, above the mouth of the Ohio, to the Missouri, the land on the east side of the Mississippi is low and flat, and occasionally

exposed to inundations; that on the Louisiana side, contiguous to the river, is generally much higher, and in many places very rocky on the shore. Some of the heights exhibit a scene truly picturesque. They rise to a height of at least three hundred feet, faced with perpendicular lime and free-stone, carved into various shapes and figures by the hand of nature, and afford the appearance of a multitude of antique towers. From the tops of these elevations the land gradually slopes back from the river, without gravel or rock, and is covered with valuable timber. It may be said with truth, that, for fertility of soil, no part of the world exceeds the borders of the Mississippi; the land yields an abundance of all the necessities of life, and almost spontaneously; very little labour being required in the cultivation of the earth. That part of Upper Louisiana which borders on North-Mexico is one immense *prairie*; it produces nothing but grass; it is filled with buffalo, deer, and other kinds of game. The land is represented as too rich for the growth of forest trees.

“It is pretended that Upper Louisiana contains in its bowels many silver and copper mines, and various specimens of both are exhibited. Several trials have been made to ascertain the fact; but the want of skill in the artists has hitherto left the subject undecided.

“The salt-works are also pretty numerous. Some belong to individuals, others to the public. They already yield an abundant supply for the consumption of the country, and, if properly managed, might become an article of more general exportation. The usual price per bushel is 150 cents in *cash* at the works. This price will be still lower as soon as the manufacture of the salt is assumed by government, or patronized by men who have large capitals to employ in the business. One extraordinary fact relative to salt must not be omitted. There exists, about 1000 miles up the Missouri, and not far from that river, *a salt mountain!* The existence of such a mountain might well be questioned, were it not for the testimony of several respectable and enterprising traders, who have visited it, and who have exhibited several bushels of the salt to the curiosity of the people of St. Louis, where some of it still remains. A specimen of the same salt has been sent to Marietta. This mountain is said to be 180 miles long, and 45 in width, composed of solid rock salt, without any trees, or even shrubs on it. Salt springs are very numerous beneath the surface of this mountain, and they flow through the fissures and cavities of it. Caves of salt-petre are found in

Upper Louisiana, though at some distance from the settlements. Four men, on a trading voyage, lately discovered one several hundred miles up the Missouri. They spent five or six weeks in the manufacture of this article, and returned to St. Louis with four hundred weight of it. It proved to be good, and they sold it for a high price.

"The geography of the Mississippi and Missouri, and their contiguity for a great length of way, are but little known. The traders assert, that one hundred miles above their junction a man may walk from one to the other in a day; and it is also asserted, that seven hundred miles still higher up, the portage may be crossed in four or five days. This portage is frequented by traders, who carry on a considerable trade with some of the Missouri Indians. Their general route is through Green Bay, which is an arm of Lake Michigan: they then pass into a small lake connected with it, and which communicates with the Fox River: they then cross over a short portage into the Ouisconsing River, which unites with the Mississippi some distance below the Falls of St. Anthony. It is also said, that the traders communicate with the Mississippi, above these Falls, through Lake Superior; but their trade in that quarter is much less considerable."

The white inhabitants are chiefly French, Canadians, Acadians, Germans and Freedes. There are many negro slaves and free people of colour among them. The whole population of this extensive country, as respects civilized men, is supposed considerably to exceed 50,000 souls. Of these nearly one half may be estimated as slaves. The tribes of aborigines, or Indians, as we call them, are amusingly and particularly thus noticed. (p. 21.)

"The Indian nations within the limits of Louisiana are, as far as known, as follows, and consist of the numbers hereafter specified.

"On the eastern bank of the Mississippi, about twenty-five leagues above Orleans, the remains of the nation of Houmas, or Red Men, which do not exceed sixty persons. There are no other Indians settled on this side of the river, either in Louisiana or West-Florida, though they are at times frequented by parties of wandering Choctaws.

"On the west side of the Mississippi are the remains of the Tounicas settled near, and above Pointe-Coupee, on the river, consisting of fifty or sixty persons.



*“ In the Atacapas,*

“ On the lower parts of the Bayou Teche, at about eleven or twelve leagues from the sea, are two villages of Chitimachas, consisting of about one hundred souls.

“ The Atacapas, properly so called, dispersed throughout the district, and chiefly on the Bayou, or Creek of Vermilion, about one hundred souls.

“ Wanderers of the tribes of Bilexis and Choctaws, on Bayou Crocodile, which empties into the Teche, about fifty souls.

*“ In the Opelousas, to the North-West of Atacapas,*

“ Two villages of Alibamas, in the centre of the district, near the church, consisting of one hundred persons.

“ Conchates, dispersed through the country as far west as the river Sabinas and its neighbourhood, about three hundred and fifty persons.

*“ On the River Rouge,*

“ At Avoyelles, nineteen leagues from the Mississippi, is a village of the Biloni nation, and another on the lake of the Avoyelles—the whole about sixty souls.

“ At the Rapide, twenty-six leagues from the Mississippi, is a village of Choctaws of one hundred souls, and another of Biloxes, about two leagues from it, of about one hundred more. About eight or nine leagues higher up the Red River is a village of about fifty souls. All these are occasionally employed by the settlers in their neighbourhood as boatmen.

“ About eighty leagues above Natchitoches, on the Red River, is the nation of the Cadoquies, called, by abbreviation, Cados: they can raise from three to four hundred warriors, are the friends of the whites, and are esteemed the bravest and most generous of all the nations in this vast country. They are rapidly decreasing, owing to intemperance, and the numbers annually destroyed by the Osages and Choctaws.

“ There are, besides the foregoing, at least four or five hundred families of Choctaws, who are dispersed on the west side of the Mississippi, on the Ouacheta and Red Rivers, as far west as Natchitoches, and the whole nation would have emigrated across the Mississippi, had it not been for the opposition of the Spaniards and the Indians on that side, who had suffered by their aggressions.

*" On the River Arkansas, &c.*

" Between the Red River and the Arkansas there are but a few Indians, the remains of tribes almost extinct. On this last river is the nation of the same name, consisting of about two hundred and sixty warriors. They are brave, yet peaceable and well-disposed, and have always been attached to the French, and espoused their cause in their wars with the Chickasaws, whom they have always resisted with success. They live in three villages; the first is at eighteen leagues from the Mississippi on the Arkansas River; and the others are at three and six leagues from the first. A scarcity of game on the eastern side of the Mississippi has lately induced a number of Cherokees, Choctaws, Chickasaws, &c. to frequent the neighbourhood of Arkansas, where game is still in abundance. They have contracted marriages with the Arkansas, and seem inclined to make a permanent settlement, and incorporate themselves with that nation. The number is unknown, but is considerable, and is every day increasing.

" On the River St. Francis, in the neighbourhood of New-Madrid, Cape Girardeau, Riviere a la Pomme, and the environs, are settled a number of vagabonds, emigrants from the Delawares, Shawanese, Miamis, Chickasaws, Cherokees, Piorias, and supposed to consist, in all, of five hundred families. They are, at times, troublesome to the boats descending the river, and have even plundered some of them, and committed a few murders. They are attached to liquor; seldom remain long in any place; many of them speak English, all understand it, and there are some who even read and write it.

" At St. Genevieve, in the settlement among the whites, are about thirty Piorias, Kaskaskias, and Illinois, who seldom hunt for fear of the other Indians. They are the remains of a nation which, fifty years ago, could bring into the field one thousand two hundred warriors.

*" On the Missouri.*

" On the Missouri and its waters are many and numerous nations, the best known of which are, the Osages, situated on the river of the same name, on the right bank of the Missouri, at about eighty leagues from its confluence with it. They consist of one thousand warriors, who live in two settlements at no great distance from each other. They are of a gigantic stature, and well proportioned; are enemies of

the whites, and of all other Indian nations, and commit depredations from the Illinois to the Arkansas. The trade of this nation is said to be under an exclusive grant. They are a cruel and ferocious race, and are hated and feared by all the other Indians. The confluence of the Osage River with the Missouri is about eighty leagues from the Mississippi.

“Sixty leagues higher up the Missouri, and on the same bank, is the River Kanzas, and on it the nation of the same name, but at about seventy or eighty leagues from its mouth. It consists of about two hundred and fifty warriors, who are as fierce and cruel as the Osages, and often molest and ill-treat those who go to trade among them.

“Sixty leagues above the River Kanzas, and at about two hundred from the mouth of the Missouri, still on the right bank, is the *Riviere Platte*, or Shallow River, remarkable for its quicksands and bad navigation; and near its confluence with the Missouri dwells the nation of Octolactos, commonly called Otos, consisting of about two hundred warriors, among whom are twenty-five or thirty of the nation of Missouri, who took refuge among them about twenty-five years since.

“Forty leagues up the River Platte you come to the nation of the Panis, composed of about seven hundred warriors in four neighbouring villages. They hunt but little, and are ill provided with fire-arms. They often make war on the Spaniards in the neighbourhood of Santa Fè, from which they are not far distant.

“At three hundred leagues from the Mississippi, and one hundred from the River Platte, on the same bank, are situated the villages of the Mahas. They consisted, in 1799, of five hundred warriors, but are said to have been almost cut off last year by the small-pox.

“At fifty leagues above the Mahas, and on the left bank of the Missouri, dwell the Poncas, to the number of two hundred and fifty warriors, possessing, in common with the Mahas, their language, ferocity and vices. Their trade has never been of much value, and those engaged in it are exposed to pillage and ill-treatment.

“At the distance of 450 leagues from the Mississippi, and on the right bank of the Missouri, dwell the Aricaras, to the number of seven hundred warriors; and sixty leagues above them, the Mandane nation, consisting of about seven hundred warriors likewise. These two last nations are well disposed to the whites, but have been the victims of the Sioux, or Naudowessies, who being themselves well provided with fire-arms,



have taken advantage of the defenceless situation of the others, and have, on all occasions, murdered them without mercy.

"No discoveries on the Missouri, beyond the Mandane nation, have been accurately detailed, though the traders have been informed, that many large navigable rivers discharge their waters into it far above it, and that there are many numerous nations settled on them.

"The Sioux, or Naudowessies, who frequent the country between the north bank of the Missouri and Mississippi, are a great impediment to trade and navigation. They endeavour to prevent all communication with the nations dwelling high up the Missouri, to deprive them of ammunition and arms, and thus keep them subservient to themselves. In the winter they are chiefly on the banks of the Missouri, and massacre all who fall into their hands.

"There are a number of nations at a distance from the banks of the Missouri, to the north and south, concerning whom but little information has been received. Returning to the Mississippi, and ascending it from the Missouri, about 75 leagues above the mouth of the latter, the River Moingona, or Riviere de Moine, enters the Mississippi on the west side, and on it are situated the Ayoas, a nation originally from the Missouri, speaking the language of the Otatachas. It consisted of two hundred warriors before the small-pox lately raged among them.

"The Sacs and Renards dwell on the Mississippi, about three hundred leagues above St. Louis, and frequently trade with it. They live together, and consisted of five hundred warriors. Their chief trade is with Michilimakinac, and they have always been peaceable and friendly.

"The other nations on the Mississippi, higher up, are but little known to us. The nations of the Missouri, though cruel, treacherous and insolent, may doubtless be kept in order by the United States, if proper regulations are adopted with respect to them.

"It is said that no treaties have been entered into by Spain with the Indian nations westward of the Mississippi, and that its treaties with the Creeks, Choctaws, &c. are, in effect, superseded by our treaty with that power of the 27th October, 1795."

The remaining part of this instructive work is principally devoted to an account of the titles to lands, courts of justice, the practice of the law, crimes and punishments, literature, the church, officers of government, taxes and duties, expenses

and debt, imports and exports, manufactures, navigation and coasting trade. The greater part of these will be found to be very valuable to the political economist; and out of them we even can select somewhat for our own purposes. Witness the remarks on the *cultivation of sugar* (p. 29), and the state of learning (p. 36).

*" Cultivation of Sugar.*

" The sugar-cane may be cultivated between the River Iberville and the city, on both sides of the river, and as far back as the swamps. Below the city, however, the lands decline so rapidly, that beyond fifteen miles the soil is not well adapted to it. Above the Iberville the cane would be affected by the cold, and its produce would therefore be uncertain. Within these limits the best planters admit that one quarter of the cultivated lands of any considerable plantation may be planted in cane, one quarter left in pasture, and the remaining half employed for provisions, &c. and a reserve for a change of crops. One Parisian arpent, of one hundred and eighty feet square, may be expected to produce, on an average, 1200 weight of sugar, and 50 gallons of rum.

" From the above data, admitting that both sides of the river are planted for ninety miles in extent, and about three-fourths of a mile in depth, it will result that the annual product may amount in round numbers to 25,000 hogsheads of sugar, with 12,000 puncheons of rum. Enterprising young planters say that one-third, or even one-half of the arable land, might be planted in cane. It may also be remarked, that a regular supply of provisions from above, at a moderate price, would enable the planter to give his attention to a greater body of land cultivated with cane. The whole of these lands, as may be supposed, are granted; but in the Atacapas country there is undoubtedly a portion, parallel to the sea-coast, fit for the culture of the sugar-cane. There vacant lands are to be found, but the proportion is at present unknown.

" In the above remarks the lands at Terre aux Bœuf, on the Fourche, Bayou St. Jean, and other inlets of the Mississippi, south of the latitude supposed to divide those which are fit from those which are unfit for the cultivation of the cane, have been entirely kept out of view. Including these, and taking one-third instead of one-fourth of the lands fit for sugar, the produce of the whole would be fifty thousand instead of twenty-five thousand hogsheads of sugar.

"The following quantities of sugar, brown, clayed and refined, have been imported into the United States from Louisiana and the Floridas, viz.

In 1799	773,542 pounds.
1800	1,560,865
1801	967,619
1802	1,576,933

"*Learning.*

"There are no colleges, and but one public school, which is at New-Orleans. The masters of this are paid by the king. They teach the Spanish language only. There are a few private schools for children. Not more than half of the inhabitants are supposed to be able to read and write, of whom not more than two hundred, perhaps, are able to do it well. In general the learning of the inhabitants does not extend beyond those two arts; though they seem to be endowed with a good natural genius, and an uncommon facility of learning whatever they undertake."

In the large and copious appendix we find nothing to our immediate purpose; for it consists chiefly of the code of Spanish laws as adapted to the province. It will be sufficient for us to inform our readers that they consist of four parts: 1. The Epitome or Digest from the *Recopilation des Indes*, as promulgated in 1769 by Governor O'Reilly. 2. A Body of Instructions as to Judicial Proceedings in Civil and Criminal Cases, by Dr. Urrustia and Counsellor Rey, and published under the same authority in 1769. 3. An Ordinance of the same Governor relative to Grants of Lands issued in 1770. 4. Regulations concerning General Police, the Repair of Bridges, Roads and Mounds, and the Treatment and Discipline of Slaves, enacted in 1795, by the then Governor, Baron de Carondelet. There are also several interesting tables of the population. Of these several articles we deem it foreign from our design to make any analysis.

If, in the review we have given of this official publication, we have been rather prolix, or have occupied more than ordinary space, it must be imputed to our desire of laying before our readers as ample a view as our limits would in any wise permit, of these authentic particulars relative to a country which is now become a part of our domain, and, consequently, a subject of uncommon interest and solicitude. And with this apology we hope our friends and patrons will be content.



ART. III. *A General History of Quadrupeds. The Figures engraved on Wood, chiefly copied from the Originals of T. Bewick. By A. Anderson. First American Edition; with an Appendix, containing some American Animals not hitherto described.* 8vo. pp. 531. New-York. G. & R. Waite. 1804.

**ZOOLOGY** may be pronounced the most agreeable and interesting part of natural history. And of the animal creation, the study of quadrupeds, or of creatures that walk the earth, and in their food, residence, and bodily organs, approximate most nearly to man, is, perhaps, next to himself, the most obvious and useful. Many of these animals supply the lord of this created world with nourishment, several of them assist him in performing labour, and a number more annoy him by preying upon his substance, and occasionally even upon his life. A knowledge, therefore, of this class of beings obtrudes itself upon the notice of every person in some degree. To him who goes extensively abroad, and especially who visits foreign climes, and examines the productions of the remote regions of the earth, a decent acquaintance with this branch of natural history is highly convenient. But the man of industry, the accomplished gentleman and the finished scholar, all find that a more intimate acquaintance with this department of physics is indispensable. How boorish, for example, is it to be ignorant of the general history of the elephant! Would it be excusable for the oriental traveller to be uninformed of the character and qualities of the camel? And it would seem that the man of business and general information ought to have informed himself pretty well of the haunts and manners of the seals, for whose skins many long and distant sea-voyages are performed; and of the food and residence of the beavers, whose furry coats are sought after with such desire that inland expeditions of great toil and hazard are undertaken to procure them. It is esteemed shameful and vulgar, in this age of the world, and in our state of society, to be wholly uninformed upon such matters.

It is not, however, our design to write an essay in praise of natural history at large, nor of zoology as one of its great departments, nor yet of the study of the mammalia as an important subdivision of it. Happily these subjects are among the most early that are presented to the eyes of infancy; they make strong impressions upon the curiosity of childhood;

and, with a little cultivation and method, tend to embellish and fortify the understanding of youth. An acquaintance with the works of nature, in addition to its other advantages, is so admirably calculated to lead to just views and proper conceptions of its author, that it is to be deeply regretted it is completely neglected in so many modern seminaries of learning. It sounds like a strange story, that the plan of fashionable education leads to the reading of almost all books, except that most delightful and instructive one, the great volume of nature.

We collect, however, from the work before us, that the public taste and the enterprize of individuals, in a good degree, supply this defect in collegiate establishments. Bewick's figures of the four-footed creatures, and the striking illustrations and ornaments which accompany them, have been finely copied in New-York. Our American Anderson has imitated most beautifully his manner of engraving upon wood. He may be said to have equalled in most respects, and even in some to have exceeded, the spirit and execution of his British original.

With impressive likenesses of the greater part of the quadrupeds described, done by this skilful artist, Messrs. G. and R. Waite have given an handsome edition of this collection of zoology. It is probably already known to many of our readers, that this history of animals is rather a popular than a scientific performance. The original compiler, in order to render the work amusing and attractive, appears intentionally to have exempted it from the formality and stiffness of system. But although he has not followed Linnè, or Pennant, or any of the methodical writers on this subject, he has made an arrangement which is very natural and easy as he passes from one quadruped to another. To young persons it is likely to be highly engaging, and may serve to prepare them for and initiate them into the more regular and systematic performances. And to elderly readers, who have no desire to study the systematic works, but are content to take subjects piecemeal as they turn up, this work will afford a great variety of information, which, though a little desultory, will not be less entertaining.

The descriptions which accompany the figures are concise and sententious, and generally very just and appropriate. We observe, with pleasure, the care that has been bestowed on the history of the horse, the cow, the sheep, and the dog. And we remark with approbation an important addition to the

original text, in the figures and descriptions of four American animals, to wit, the shy hamster of Georgia, the fossil mammoth skeleton of New-York, the wild sheep of Louisiana, and the strange vivo-oviparous shark of Long-Island. These make a substantial addition to the work, and must be considered, by every person of discernment, as giving to it new importance and value. On considering all these circumstances, it would be an omission of what we conceive due to the publishers, if we did not wish them to be well remunerated for their laudable design, and the becoming manner in which they have executed it.





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## MEDICAL & PHILOSOPHICAL NEWS.

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### DOMESTIC.

#### LOUISIANA.

*Report made by Dr. MITCHILL, Chairman of the Committee of Commerce and Manufactures, on the Resolve of the House of Representatives, directing them to inquire into the Expediency of authorizing the President of the United States to cause certain remote and unknown Parts of Louisiana to be explored, and read in Congress Feb. 18, 1804.*

“BY a series of memorable events, the United States have lately acquired a large addition of soil and jurisdiction. This is believed, besides the tracts on the east side of the Mississippi, to include all the country which lies to the westward between that river and the great chain of mountains that stretch from north to south, and divide the waters running into the Atlantic from those which empty into the Pacific Ocean; and beyond that chain, between the territories claimed by Great-Britain on the one side, and by Spain on the other, quite to the South-Sea.

“It is highly desirable that this extensive region should be visited, in some parts at least, by intelligent men. Important additions might thereby be made to the science of geography. Various materials might thence be derived to augment our knowledge of natural history. The government would thence acquire correct information of the situation, extent and worth of its own dominions, and individuals of research and curiosity would receive ample gratification as to the works of art and productions of nature which exist in those boundless tracts.

“There is no need of informing the House, that already an expedition, authorised at the second session of the seventh Congress, has been actually undertaken, and is going on, under the President’s direction, up the Missouri. The two enterprizing conductors of this adventure, Capts. Lewis and Clark, have been directed to attempt a passage to the western shore on the South-Sea: from them, on their return in 1805,

a narrative full of instruction may be expected. It is also understood that a survey has been ordered to be made of the Mississippi, from the mouth of the Ohio to the Falls of St. Anthony. Of this a correct map may be expected within a reasonable time. The like also is hoped, in the course of a moderate period, from the latter place to the source of the Mississippi, and thence to the Lake of the Woods.

“Men of political research have, in like manner, long known that the course of the Mississippi downwards to the Gulf of Mexico has been well delineated by Capt. Hutchings; and that, more recently, by the assiduous observations of Mr. Ellicott, the turnings and windings of that river, southward of its junction with the Ohio, and the territorial line on the 31st degree of north latitude, to the north-western angle of Florida, have been exhibited in a perspicuous and scientific manner. Along the coast of the ocean too, from Perdido Bay to the Bay of St. Bernard, navigators have viewed the shores and coast so often, that there is little left to explore.

“But although there is so much really known, or in a train of investigation, concerning Louisiana, there are still some parts upon which it would be desirable to possess additional information. The tracts alluded to are those which remain principally in their original obscurity, and strongly attract the eye of the adventurer. Their pathless forests may be advantageously penetrated along the channels of the *Red River* and the *Arkansas*, two of those large and long water courses which intersect them. An expedition of discovery up these prodigious streams and their branches might redound as much to the honour, and more to the interest of our government, than the voyages by sea round the terraqueous globe have done for the polished nations of Europe who authorized them. Such liberal enterprizes will befit the present season of prosperity, and may be expected to succeed best during the reign of peace.

“The *Red River* was visited many years ago, and even settled as high as *Natchitoches*. This old establishment is laid down in some of the maps as being only seven leagues distant from the station of *Adais*, the capital of the province of *Texas*, and situated on the river *Mexicano*. *Red River* is described as difficult to ascend when the waters are low, but when high, a traveller may, by means of them, penetrate where he pleases. More than half a century ago, it was said, that along its banks were many inferior lakes and drowned lands, that abounded with alligators and fishes; that its shores were in-

habited by plenty of bisons, bears, tigers, wolves, deer, and several other species of untamed beasts; as well as by turkies, geese, swans, ducks, and other kinds of wild fowl; and that all manner of indigenous fruit-trees and grape-vines sprout up luxuriantly from the soil. To these accounts, which are common to most other parts of the American wilderness when first visited by civilized men, other facts and considerations are now to be added. The nation has been lately told, on respectable authority, that the Red River is navigable by boats one thousand miles beyond Natchitoches. It is reported to run through a country abounding in rich prairies, where neat cattle and horses range in innumerable herds as independent as the natural inhabitants. There is reason to presume the head of this stream lies concealed in the southwestern corner of the newly-ceded territory. The limits of Louisiana, in that quarter, are obscure and undefined. And it is worthy of legislative consideration, whether the latitude and longitude of the Red River source ought not to be ascertained under the authority of the nation. It may be expected that individuals will venture upon such undertakings for the gratification of their own speculative curiosity; and, by discreet management, the jourmies of such persons may be made to minister to the national wants, and to general instruction, with but a trifling appropriation from the treasury.

“The Arkansas, which has been already traced above one thousand miles, also seems worthy of being explored with more care, and to a greater extent than has hitherto been done. A spacious plain and valley, incrustated annually (like the soil in some spots about the Persian Gulf) with native salt, in quantity sufficient to impregnate a branch of the Arkansas, and occasionally the river into which it falls, with its briny quality, and to make it a SALT RIVER down to the settlement of Ouizarque, for considerably more than six hundred miles of its course, might be mentioned as no ordinary occurrences. The masses of VIRGIN SILVER and gold that glitter in the veins of the rocks which underlay the Arkansas itself, and mingle with the minerals near certain other of its streams, and offer themselves to the hand of him who will gather, refine, and convert them to use, are no less uncommon and wonderful. These extraordinary productions might be dwelt upon to considerable length in this report; but credible as both the relations are, the committee forbear to offer any thing more, than that the existence of a *salt river*, precious mines and ores, and of some other remarkable objects, are stated upon



solid and credible testimony. Omitting these things as not necessary to be urged to Congress, the committee consider that the latitude, longitude, and relative situation of the source of the Arkansas, are themselves of sufficient moment to render their attainment very desirable.

“ Without writing a sentence on the advantages of tracing the streams of the Black River, the White River, the Mexicano, and of other rivers to their sources, the committee submit the following opinion:

“ That it will be honourable and useful to make some public provision for further exploring the extent, and ascertaining the boundaries of Louisiana; and,

“ That a sum not exceeding ——— dollars be appropriated for enabling the President of the United States to cause surveys and observations to be made on the Red River and the Arkansas, or either of them, or elsewhere in Louisiana, as he shall think proper, for these purposes.”

An appropriation for the purposes expressed in the above report was actually made by Congress shortly after it was presented, and the expedition is probably going on by this time.

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*Information concerning Louisiana: from a Communication to Dr. Mitchill by the Hon. Thomas Sandford, of Kentucky. The Materials collected by Major H. M. Pike, and written at Kaskaskias, in August, 1803.*

The Fredes will find it to their advantage (after the example of the Spaniards) to divide Louisiana into two territories—the upper and the lower. Orleans will be the capital of the latter, and St. Louis of the former. The lower province will be the country for the cultivation of cotton, indigo and sugar. In the upper will be raised wheat, and all kinds of small grain. Indigo, maize, hemp, tobacco, salt and lead; are likewise the great staple commodities of this province, by which it may in time, under the fostering arm of the national government, rival the settlements on the Ohio, in supplying the lower province and the West-Indies. In this region the curse of slavery ought not to be entailed on posterity.

The population of this country is extremely small. From about one hundred miles up the Missouri to the mouth of the St. Francis, extending about fifty miles on an average back from the Mississippi, are the villages of *Bonhomme*, *St. Louis*, *St. Genevieve*, *St. Charles* (fifteen miles up the Missouri), *New-Bourbonne*, *New-Madrid*, *Petit-Praire*, *Portage de Sour*, and *Cape Jerredotte*. The whole population of these

places is, from the last calculation, about 6250 souls, exclusive of the slaves.

The Indian trade is very important; and if a company of sufficient capital was to establish itself at St. Louis, it might rival the famous N. W. Company of Canada. In order to give you some idea of the value of this trade, I can inform you that an individual has given the Governor 5000 dollars for the privilege of trading on some of the lower waters of the Missouri. There are trading establishments seven hundred miles: from these they make excursions several hundred miles further, to traffic with the *Sioux of the Meadows*, the *Sioux of the Woods*, the *Padoucas*, *Kanzas*, *Grandeseaux*, *Missonris*, and a number of other indigenous nations. One trader has collected thirty thousand dollars worth of pelts in the course of a single year. The *Ozas*, or *Osages*, border on the white settlements.

The Missouri has been navigated 2500 miles; and it was still said to be an immense distance to its source. Indeed, from the best information we have, there appears to be a probability of a communication by this channel with the western ocean. The Indians assert the source to be in a lake, from which rivers take their course to the S. W. It is highly desirable that it should be explored.

Many things are told by the voyagers of the Missouri, which are almost as strange to tell as the volcano\* and mountain of salt. The latter is well authenticated; for I have seen some bushels of salt from the mountain, in the possession of an intelligent gentleman of St. Louis. From a French manuscript in his possession I ascertained the dimensions of the salt-mountain to be 60 leagues by 15. It is supposed that the country abounds in minerals; but as yet none have been discovered except lead. This, near the village of St. Genevieve, is dug up in such quantities as to supply the States of Ohio, Kentucky, Tennessee, part of Pennsylvania and Virginia, and the territories of Indiana, Mississippi, and Louisiana; besides a vast quantity for exportation. A profitable manufactory of shot is erected there.

The whole of the Indians S. W. of the Mississippi, and in Louisiana, are calculated at 20,000; but the most powerful of these nations are the furthest removed from our frontiers, and are only armed with bows, arrows, spears and war-clubs.

\* Dr. Mitchill has a piece of pumice-stone that was picked up floating on the Missouri.

We have ascertained that the mines of Santa Fè lie nearly on a parallel with the mouth of the Ohio. One of the men who works in these mines has his family in this country, whom he visits annually. He reports that the journey can be made with ease in fifteen or twenty days march on foot, or in ten or twelve on horseback; that one-third of the distance is through the woods, and the rest through an immense prairie, where not a tree, shrub or knoll is seen to bound the prospect, and the horizon only terminates the traveller's view for many a successive day.

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*Further Information concerning Upper Louisiana: in a Letter from the Hon. John Smith, Senator of the United States from the State of Ohio, to Dr. Mitchell, dated Washington, March 8, 1804.*

On examining my journal I find the following note, taken from the account of a Mr. Joseph Baird, who appeared to be a man of decent manners.

The Arkansas River has been navigated 1050 miles by large boats, and from its appearance its navigation must be good much higher. At or near the distance stated above, there is a hill of considerable size, composed of the purest crystal. He (Mr. Baird) gave me a small piece, which, as a specimen, he brought home. About a hundred, or a hundred and fifty miles lower down, there is a large creek, which he was informed had not been traversed by a white man more than fifteen miles from its junction with the main river. On both sides of this creek the bottoms are flat, and spread over with salt water, which breaks out from the foot of the neighbouring hills. In the dry part of the season (say the latter part of the summer and early part of the fall) the salt water congeals into a solid sheet of pure salt, from six to eight inches thick. A few years ago a sudden rain succeeded the formation of this body of salt. It happened not to fall upon the main river. It was confined to the waters of this creek, and raised it suddenly over its banks. It dissolved and swept off the salt, by which means the river became so highly impregnated with salt, that at Ouisarque settlement, 900 miles below, the people made salt, and could not drink the river water for near three weeks. On White River he told me there was salt in great abundance. It has been navigated 900 miles: and on it stands four or five family vaults of ancient date, made of hewn stone, of ordinary size, and discovers the neat and finished workmanship of an artist. The lands on those



waters are of the most fertile and luxuriant kind. Myriads of buffaloes and other animals resort to the salt water.

On Red River it is said there are gold and silver mines, and salt, as well as on the Arkansas. The navigation of Red River is obstructed by a considerable fall in the water below Natchitoches. It, however, is a long and an important river.

The three rivers above named are the most important, south of the Missouri, which empty into the Mississippi, and the only ones that will be necessary to have traversed at this time.

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ACCOUNT OF THE RIVER MISSOURI.

The Missouri, which ought to have taken the name of Upper Mississippi in preference to the smaller branches so called, has, according to the savages, its source in a chain of mountains at no great distance from California. There is said to be a considerable cataract near the source. Fifteen years before, Mr. C——, of St. Louis, ascended this great river to the distance of five hundred leagues, in a general direction of W. N. W. No other person before him had ever penetrated so far; and none, perhaps, have since exceeded that distance; so that the source remains yet unknown to all but the savages. Whatever, then, may be said here of the river and country, beyond this point, must be ascribed to information derived from the remote Indians.

After running a course of two or three and twenty hundred miles, the Missouri disembogues into the Mississippi, in lat. 38, 74, N. being about 15 1-2 W. from Philadelphia, and five leagues above St. Louis des Illinois, capital of Upper Louisiana. In ascending the stream we find all its larger branches uniting with it on the southern shore, there being but few waters, and those inconsiderable, that empty on the opposite side.

The current of the Missouri is extremely rapid, very muddy, and frequently more difficult to ascend than the Mississippi. Its turbidness is occasioned by a large river, called the Plate, which, rolling impetuously for some distance through a sandy desert, rushes into the other, on its southern side, about two hundred leagues from its mouth. The turbulence and impurities of the Plate are now communicated to the waters of the Missouri, and descend, though diminished, with the Mississippi, down to the Mexican Gulf. Above the Plate, the stream of the Missouri is said to be clear and gentle as is that of the Mississippi above the Missouri's mouth. And yet we are told that all the waters which fall in above the Plate were

muddy, except one, while all below it are clear. If this be true, it proves an astonishing degree of muddiness in the latter. Travellers do say that about a fourth part of its bulk is formed of mud and sand; and so impetuous is its stream, that although boats sometimes ventured down, yet none ever attempted to ascend it. From the name of this river it would appear to be embarrassed with shoals. The desert through which the Plate takes its course is said to extend a hundred miles on both sides; that it is made up of hills and plains of arid sand; that in high winds vast bodies of sand are taken up and carried through the air, burying irrecoverably whatever they happen to fall upon; and that, in this dreary tract, there is little or no vegetation, nor any animals to be seen, excepting a species of rabbit, and an animal of the sheep kind.\* Nor is it inhabited by any of the human race.

The writer has in his hands the copy of an original MS. map in the possession of a gentleman there high in office. It embraces the whole of the Missouri and Mississippi, with their waters, and lays down, among other things, the various nations and tribes of savages inhabiting those extensive regions. According to this map, the Plate extends southwardly between twelve and fourteen hundred miles, interlocking its head waters with those of la Riviere du Nord (North-River), down which stands the city of Santa Fè, where the Spaniards have valuable gold mines.

About two hundred leagues further up the Missouri, that is, beyond the Plate's mouth, there is a remarkable bend called the Grand Detour, concerning the extent and position of which my informants were not perfectly agreed; some making it describe a circuit of thirty or forty leagues; but Mr. C——, in whose intelligence may be placed great confidence, affirms that it does not exceed eighteen leagues. Be that as it may, the beginning and end of this bend approach so near to each other, that a man can walk across the neck between them in half a day, whereas it takes up eight or nine days to row up the stream around it. Hence it would appear that the stream here is by no means placid, and therefore an exception to what is said before as to the gentleness of the current above the River Plate. The map lays down this bend as north of the general course of the river; but it has been said that it takes the opposite position.

\* A description of this animal lately appeared in many of the public prints, copied from Medical Repository, Hex. I. vol. vi. p. 237.

In the neighbourhood of the Grand Detour, and about ten leagues from the river, on its north side, there is a lofty volcanic mountain, which is frequently in a state of eruption. This will account for the pumice-stones so often found floating down the Missouri and Lower Mississippi. To this volcano may be attributed a smart shock of an earthquake, felt at Kaskaskias, &c. at three o'clock in the morning, January 8, 1795, and which came in an apt direction from the mountain.\*

The navigation of the Missouri is attended with difficulty and danger; danger from its numerous quicksands, and difficulty from the obstinacy of the current. The quicksands lie sometimes in shoal water, and sometimes form dry bars or islands of various extent. If a boat happen to strike on one of the former, it is usual for the hands instantly to leap into the water, and push her off. Without this precaution the sand would quickly boil over both bows and gunwales, and swallow up the boat.

While at St. Louis there was a story of a melancholy catastrophe that once happened to a party of traders on their return. Having landed on a dry sand bar to take some refreshments, the bar suddenly disappeared, carrying down with it both men and boats.

There is a non-descript quadruped found high up the Missouri, about the size of a full-grown elk. He is covered with a coat of long fine hair, and has a horn on each side of the head, which, turning upwards, describes a volute, and passes off horizontally parallel with the nose. Some of these horns were presented to the commandant of St. Louis, who said that their diameter, at the root, was equal to the crown of his hat. He had sent them to the Baron de Carondelet, Governor-General of Louisiana, which deprived me of the satisfaction of seeing them. This animal is said to be docile, and very useful to the natives as a beast of burden and an article of food.

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#### TEMPERATURE OF SPRING WATER.

*Experiments on the Temperature of Spring Water near New-York, during the Summer of 1803.*

On the 13th, 14th and 15th days of August, 1803, Dr. Mitchill made many experiments on the temperature of water gushing from the interior parts of the earth, in the neighbour-

\* Some years after the above was written certain travellers proceeded to the mountain, and found it raging. They could not approach within a mile of it for fear of suffocation from the sulphureous fumes it sent forth.



hood of Plandome, on Long-Island, in the latitude of about 40, 45, N. The springs were of various heats. Where the rill of water was small, it commonly borrowed warmth from the upper strata of the ground, and was heated some degrees thereby. Where the water stagnated, and did not run quickly off, it also acquired heat. Some of these slow and scanty runs of water were as warm as 58 deg. and some even raised the quicksilver to 64. But where the springs were well protected from the sun, and their water issued from the bottom of high and well-shaded banks, the mercury fell to 56, and in several of the coldest to 54.

The coldest springs that could be found were of the temperature of 54, and were incapable of bringing the thermometer lower. And this was the exact heat of water fresh drawn from a well of thirty feet in depth, partly shaded from the sun, and situated in a slope facing the north. In all these experiments the elevation was but a few feet above the level of the ocean.

These heats correspond very nearly with the temperature of the cave of the Observatory at Paris, ninety feet under ground, which has an invariable point of 53 deg. and of the deep cave in England, of which Mr. Boyle writes, which was of the same warmth.

Mr. Kirwan, in his *Estimate of the Temperature of different Latitudes*, (p. 90), has calculated that the temperature of Cambridge, lat. 42, 25, in Massachusetts, was 50, 3; and of Ipswich, lat. 42, 38, in the same State, was 50, 17. These temperatures he computes to be ten degrees, or a little more, below the European standard. From an observation of Kalm on the heat of water from a deep well, in lat. 42, between New-York and Albany, it would appear that the heat of water thereabout was 49. This is five degrees colder than the temperature on Long-Island, and eleven lower than the same latitude in Europe. The heat of water from the deepest wells near Philadelphia, lat. 39, 56, is stated to be 52, 5; that is, a degree and an half colder than at New-York, and about ten degrees cooler than Europe. This is probably owing to its greater distance from the ocean.

Considering, now, the uniform heat of the interior parts of the earth, near the city of New-York, to be 54 degrees of Fahrenheit's scale, there is an easy method of comprehending how the roots of shrubs, trees, and all kinds of vegetables which penetrate to any considerable depth into the earth, are kept warm, and guarded against the violence of frost. Every

running spring of water, every open well, every air-hole in the ice, and, in short, every lake, bay, or surface of uncongealed water, is also a source of heat pouring forth to temper the incumbent and adjacent atmosphere: for the particular mode of effecting which the reader is referred to Dr. Mitchill's experiments on the subject, as published in our Hex. I. vol. iv. p. 309—312.

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PIKE-HEADED WHALE.

A whale, which is the *Balæna Boops* of Linnæus, or the *Pike-headed Whale* of Pennant, has been exhibited for a show in New-York. He was taken in the Delaware, where he got aground near Reedy-Island. His dimensions were as follow:—In length, from snout to tail, 38 feet; in circumference 18 feet; breadth of the tail eight feet; expanse of the jaws at the extremity eight feet.

He had no teeth in either jaw. In the upper jaw there was whale-bone of from one to two feet long, and none in the lower. The bone was of a grey hairy appearance on the inner side.

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EARTHQUAKE AT NEW-YORK.

About one o'clock in the morning of Tuesday, May 8th, 1804, a slight earthquake was felt at New-York and in its vicinity. It was but of short duration, not exceeding a few seconds. The shaking of houses and furniture was in some instances very perceptible. People who were awake were very much surprised by it; and it even roused some from their sleep. It was accompanied with a peculiar rumbling or rattling noise. This both preceded and followed the shock. Its progress was thought to be from east to west; and it is not known that any damage was done by it. This is the only earthquake felt here since the one which happened in November, 1783, about the time New-York was evacuated by the British troops.

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CURIOUS SETTLEMENT AND GOVERNMENT AMONG CERTAIN PEOPLE IN GEORGIA.

Agreeably to a concurrent resolution of the 7th of May, 1803, authorizing the Governor to take such measures as he might deem necessary to ascertain and identify that tract of country, ceded by the United States to Georgia, lying eastwardly of a line running north from the head or source of the most northern stream of Tugalo River, Governor Mil-

ledge gave the Surveyor-General such instructions as to him seemed proper for having the object of that resolution accomplished; and it affords satisfaction to say, that he has discharged the duty required of him in a manner that was pleasing to the legislature. The Surveyor precisely ascertained the true source of the Tugalo River, the spot that separates Georgia from South-Carolina in the north-western quarter, and the course of the dividing ridge of mountains between South-Carolina and the territory obtained from the United States: also, the 35th degree of latitude north of the Blue Ridge, which divides Georgia from North-Carolina, and the course of Indian lines, run by Gen. Pickens and Col. Meigs, under the authority of the United States. From all which he finds a tract of country belonging to Georgia, to which the Indian title has been extinguished, containing one hundred and sixty-three thousand two hundred acres, watered by the river French-Broad and its branches, which have their origin chiefly in that spot. The Surveyor-General describes the country as mountainous, inhabited by an orderly and industrious people (in number about eight hundred), living under no other regulations than such as necessity has compelled them to adopt for the security of themselves and their property.

Whereupon Governor Milledge recommended the passage of such laws as might be deemed expedient for establishing regular government among them, and for affording that security in the possession of their estates which the right of occupancy entitled them to; and the adoption of such other measures as may be essential to their interest, and the interest of the State.

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#### HISTORY OF AMBERGRIS.

The experience of the Nantucket whalemén elucidates the history of this precious drug, of which so many accounts have been given. Jared Coffin, Esq. related to Dr. Mitchill that they sometimes found it floating on the ocean in masses of fifty or sixty pounds, of a chocolate colour, and filled with the beaks of a species of sepia, or cuttle-fish, called by them *the squid*. They say it is the fecal matter pent up in the intestinum rectum of the costive spermaceti whale (*Physeter Macrocephalus*). This creature devours the squid; and from this it can be understood whence the appearances of beaks or bills of the sepia are so plentiful in ambergris. When the fish is mortally wounded, and in the struggles of death, this perfume is sometimes discharged from the anus. It is also



voided occasionally in the natural way. As it always swims, they have generally countenanced the report of its being found floating on the sea, without telling its full history, or declaring what the substance truly was. It is not very often met with; the whale being not frequently in such a state of constipation and disease. Some persons who have been whalers all their lives have never seen ambergris. As, therefore, it is rarely met with, it sells for an high price. In its natural form, as they find it, they receive for it from the perfumers in London sixteen guineas a pound, or one guinea the ounce.

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PORTSMOUTH SALT-WORKS.

The Rev. T. Alden, of Portsmouth, in New-Hampshire, having made some improvements in the construction of salt-works, a respectable company has been formed and incorporated, by the name of, *The Proprietors of the Portsmouth Salt-Works*, for the purpose of erecting works on his plan. The company has purchased the place in Kittery, opposite to Portsmouth, which was lately owned and occupied by William D. Peck, A. M. A. A. S. &c. Early in the month of April twenty men were engaged in the business of erecting the works, and it is expected that they will be completed so as to be put in operation this season.

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PARTICULARS RELATIVE TO THE GENERATIVE PROCESS  
OF THE SHE BEAR.

In our first Hexade, vol. v. p. 343, the facts observed by the North-Carolina hunters concerning the procreation of the bear were stated. Information was requested on so peculiar and obscure a subject. Not a great while after, the account was contradicted in the *American Review* for 1802, p. 493. It was denied that the imperfect lump of a foetus was excluded at so early a period, and licked into shape. Since that time we have received additional information of a positive kind, which is contained in the following letter from Mr. Benajah Bingham, dated Salisbury (Connecticut), June 24, 1803, addressed to the editors.

“From lately reading in your fifth volume, p. 343, some account of the generation of the North-American bear, I am induced to state to you the following fact, which, if necessary, might now be sworn to by many witnesses.

“The day before Christmas, 1799, a she bear was killed in her den, in this town, which I dissected with my own hands, and found in her three young ones, which were in

perfect shape, and of the size of kittens of two months old. They were of different sexes, and as complete bears as they could have been at their full growth. As I had often heard the matter disputed, I have only to lament that I had not my wits about me, and preserved them."

Whether the opinion of the premature exclusion of the young bear is true, and will bear the scrutiny of modern observation, our rural inquirers must decide. The story, however, is an old one; for we find the opinion held by the ancients longer ago than the beginning of the Christian æra. The poet Ovid, in the fifteenth book of his *Metamorphoses*, mentions it thus:

*Nec catulus partu, quem reddidit ursa recenti  
Sed malè viva cara est. Lambendo, mater in artus  
Fingit; et in formam, quantam capit ipsa, reducit.*

The gravid bear brings forth, devoid of help,  
An ill-shap'd living lump, and not a whelp:  
From this the dam, by licking, forms her young,  
And shapes its plastic members with her tongue.

#### INDIAN TESTIMONY ON THE GESTATION OF THE SHE BEAR.

*Dr. William Harris, of Belle-Font, Centre County, Pennsylvania, has written to Dr. Miller the following Particulars on the History of the Bear, dated April 23, 1804.*

Observing in the *Medical Repository*, Hex. I. vol. v. p. 343, some circumstances respecting the generation of the American bear, it appeared to me the relation of the hunters was indeed curious. If these opinions were credited as facts, zoology would furnish a novelty bordering on the marvellous. It would be a strange deviation indeed from the common or usual manner of animal generation, and would demand the further search of naturalists into these wonderful phenomena of nature. What could have led to the formation of this opinion is, perhaps, difficult to say. The process of almost all quadrupeds is tolerably uniform in the propagation of their species, differing only in circumstances according to the peculiarities of each species, each producing or bringing forth its young in perfect shape, according to the likeness or image of its parent.

Being struck with surprise at this new doctrine, I immediately directed my inquiries to the Indians, with a view of investigating satisfactorily the truth of the subject, considering those people peculiarly qualified to give an ample account of the manners and customs of the different kinds of game fa-

miliar to their hunting grounds. They were as ready to give their opinion as I was to request it.

I wrote to three of their captains; first to Little John, a noted hunter of the Seneka nation, and a man in high repute by his own tribe, directed to Benjamin Jordan, a man of strict veracity on the frontiers. The result was this:—He has killed many bears, and at all seasons of the year, both male and female. He has repeatedly killed the female bear in a pregnant state. This spring in particular, on the first of March, having encamped near a large hollow tree, during the night he often heard a noise at the tree, which he supposed to be a bear sucking its paw. In the morning he directed his course to the tree, and found a she bear, which he killed, and, after opening her, took out three young cubs, about the size of a common rat, with short hair on them, and in perfect shape. He is of opinion that she would have brought them forth in two weeks. He is further of opinion that the bear brings forth her young after the manner of the bitch or canine species. The time of their becoming impregnated, with the oldest, is in August, and the youngest in September. He remarks that, when they find themselves pregnant, they retire to some secret place (being then commonly very fat), and continue there, licking their paws, till they have their cubs. Sometimes they retire to the cliffs of rocks; at other times to beds of laurel and hollow trees and stumps, in which they hybernate. They by no means become torpid, as has been said. The warm weather in winter often brings them out from their solitary dens. Capt. Hunt, of the Muncy tribe, gives, through the same channel, the same account, with no material deviation; and remarks that hunters may have been deceived when examining for the young in the womb of the dam, from their being so small; but says he can find them, and has taken out a great number at different stages, from the embryo to the mature foetus.

Capt. Halftown, brother-in-law to Cornplanter, has corroborated the account of the other two. He has killed many bears, and has taken from the womb of the dam cubs without number. He adds—"It is very strange that white men, who ought to be wise, would make so wonderful an error in their opinion, when nature and reason might have learned them better." He says the bear propagates her species like the bitch, and affords them nourishment in the same manner. He remarks that the male bear does not hybernate till much later in the season than the female, and for which, he thinks, they have no stated time.



The above men are far advanced in years, and noted as men of strict veracity, and much observation and intelligence, by the white people, and in very high esteem by their own nations.

Should these facts, as related by the natives of our country, be credited (and of which, I presume, there is no reason for doubt), it will correct a very erroneous opinion in zoology.

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EXTENSION OF THE EMPIRE OF THE UNITED STATES.

By the cession of Louisiana, lately made, it is understood that the French government has acquired a vast tract of country, extending from the Mississippi, on both sides of the Missouri, quite beyond the Northern Andes to the Pacific Ocean. On that western coast it may be soon expected that our enterprising citizens will make settlements, and the government allow them sea-ports. These will aid the whaling and sealing voyages, and enable a more direct and rapid trade to be carried on between this country and China, or the East-Indies. But the limits of our empire do not end here. We may rightfully lay claim to several newly-discovered islands in the Pacific Ocean. A navigator from New-York, a few years ago, fell in with several beautiful isles, whereon were no inhabitants; he visited them, and named them; and as there are no human beings upon them, our government may rightfully claim them, and annex them to the continental possessions. A cluster of fertile islands, lying half-way between the two continents of America and Asia, may afford us, in process of time, many conveniences, in a political and commercial point of view.

The islands we mean were discovered by Capt. Fanning, in his voyage across the South Sea. Of these, Capt. Edmund Fanning communicated to Dr. Mitchill the following extracts from a journal kept on board the ship *Betsy*, of New-York, on her passage through the Pacific Ocean.

*“ Monday, June 11, 1798.*

“ At 3 A. M. discovered land close aboard, distance about one and an half miles; hauled our wind to the N. E. till daylight; at 6 A. M. the extremes of the land bore from S. S. W. to W. N. W. which proved to be three islands, laying in the form of a triangle, which formed a large and spacious bay. There was good landing on the bay-side of the islands; on the sea-side none, owing to a large surf constantly breaking on a reef of rocks which lays along the sea-side of them. The

centre of these islands lays in lat. 3, 55, N. long. 159, 10, W. of London. In doubling round the north-west end of the northernmost island will be found a bank, where a ship or ships may anchor in from twenty to thirty fathoms sandy bottom. There was sufficient water for any ship to pass through, between the northernmost and southernmost islands, into the bay, where they will find a good harbour. We landed on these islands, where we found cocoa-nuts in the greatest plenty, lying in heaps under the trees, which appeared to have fallen from them for years past: other tropical fruits were plenty. We discovered no signs of any inhabitants, and therefore supposed ourselves to be the first human beings that had set their feet on these islands. The greatest plenty of excellent fish, of different kinds, are easily caught here, but we saw no turtle. Sharks were very numerous, and so ravenous as to dart at the boat's rudder and oars, and bite them with great greediness. We saw a number of birds, of different kinds or species, some of which had plumage extremely beautiful, particularly one kind about the size of the American robin. Its breast and under part of its body were scarlet, its back and wings a bright green, yellow beak, and black tail. There appeared to be a regular current setting in and out of the bay, which was caused by the ebbing and flowing of the tide. We saw no signs of any rivulets or brooks of fresh water. The land near the sea-side was low and sandy, but the interior had every appearance of a rich and luxuriant soil. We called the northernmost of the islands Fanning's Island, the southernmost Brintnal's Island, and the easternmost Williams's Island. These islands were about three or four leagues in length, and two or three in breadth; but there were several small islands laying in their vicinity.

" Having supplied ourselves with fish, cocoa-nuts, &c. at 6 P. M. we left the above islands, and steered to the N. W. Tuesday, 12th, at 11 A. M. discovered land, bearing W. N. W. about five leagues distant. At meridian it bore W. by N. distant four leagues, and proved to be a single island, which, from its verdant and beautiful appearance, we named Washington's Island, after President Washington. Washington's Island lies in lat. 4, 45, N. long. 160, 8, W. of London, bearing about N. W. by W. from Fanning's Island, distant twenty-seven leagues. Its form is circular. There is a fine sand-bank off the west side of it, which extends a mile and an half into the sea. There appeared to be good clear anchorage on this bank, at the distance of about one mile from the

shore. This island is about five leagues in circumference, and has a fine white beach to land on. The land being higher than Fanning's Island, it is presumed fresh water might be procured here. There was a great number of different kinds of fish round the ship as we passed the island, of which we caught many fine ones, much resembling in shape the king-fish caught in the West-Indies. On leaving Washington's Island we steered N. W. by W. On Thursday, the 14th, at sun-set, it blowing a fresh gale at N. E. and squally, saw large flocks of different kinds of birds, one sort a small dark brown bird, with a white spot on the crown of its head. As I had not seen this kind of bird but a very few miles distant from land, I judged the land was not far off; and as these birds took their flight to the westward, I thought best to haul the ship upon a wind with her head to the northward, and passed the night under easy sail, the fresh gale continuing all night; at 5 A. M. bore away to the N. W. and made sail; at 7 A. M. discovered a most dangerous shoal of breakers off the lee-bow, bearing S. W. by W. about two leagues distant; immediately hauled up, and passed to the northward of them. This shoal has a circular form, and is about six leagues in circumference, and forms a large lagoon of white water, its lat. 5, 15, north, long. 162, 18, west of London. We supposed that we saw land from the mast-head, to the southward of the shoal, but it was so hazy we were not certain."

LARGE OX RAISED IN NEW-YORK.

During the month of June, 1802, an ox was exhibited in New-York, which excited a large share of attention. Farmers, planters, and agriculturists of all sorts went to behold this creature of uncommon size. He was seven years old, and weighed alive upwards of three thousand pounds nett. He was twenty hands high at the withers. His circumference around the thorax was ten feet, and the distance from the tip of his nose to the extremity of the tail, was eighteen feet. He was raised in Beekman-Town, Dutchess County (New-York), by Mr. Theodorus Van Wyck. This is a positive contradiction to the doctrine delivered by Dr. Robertson, in his History of America (vol. i. book 4). "Most of the domestic animals," he writes, "with which the Europeans have stored the provinces wherein they settled, *have degenerated with respect either to bulk or quality*, in a country whose temperature and soil seem to be less favourable to the strength and perfection of the animal creation." There is no proof that we know,



of the want of force and vigour in the neat-cattle of America. They grow as large, under equal circumstances, as in any part of the world. But when will the misrepresentations and unfounded tales of transatlantic writers cease to circulate? This same author, of great and unquestionable learning, has affirmed (*ibid.*) that "America gives birth to no creature of such bulk as to be compared with the *Elephant or Rhinoceros.*" The SKELETON of the MAMMOTH, found in the same region of New-York where this ox was raised, refutes this assertion most completely. This very land has supplied the skeleton of the largest quadruped ever known to have lived. (See *Med. Rep. Hex. I. vol. iv. p. 211*; and *Jefferson's Notes on Virginia, p. 84.*) An ox, full as large as the above, was exhibited at Washington in March, 1804. He was six years old, and also weighed upwards of three thousand pounds alive, and was raised in Chester County, Pennsylvania.

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OLD AGE PROTRACTED BEYOND THE DURATION OF THE MORAL, INTELLECTUAL, AND PERCEPTIVE POWERS.

Deborah Cornwell, widow, and mother of six children, has arrived to the age of ninety-three years. She is rather of a small frame, and delicate habit, but has generally enjoyed good health. Until within two or three years she has been remarkably active; and could assist in domestic affairs, make visits on foot to the neighbours, and talk of old events and of the news. Since that time the powers of her mind have undergone a gradual and almost total obliteration, while her bodily functions, though enfeebled, are accompanied with an external appearance of plumpness and smoothness nearly equal to what she possessed twenty years ago. At present she does not know her own sons and daughters. She has entirely ceased to talk, though formerly noted for volubility of tongue. It is doubtful whether she knows the difference between day and night. Yet her countenance looks almost as well as it used to do. She has had no paralytic stroke, or hardness of hearing; and her eyes are perfectly transparent, both coats and humours, only the pupil is closely contracted, and, what is strange, delicately sensible to light.

Indeed, as far as can be ascertained, this woman's organs of sense are in very good condition. As far as mere sensation extends, her eyes, ears, tongue, &c. seem capable of performing their respective functions. But her principal failing appears to be in the brain itself, whereby that corporeal organ

has become unfit for the purposes of perception. This callosity or torpor of the brain, if not a paralysis or absence of mind, would seem to be an absolute bar to all intercourse between the external senses and the mind. The brain of an infant has been compared to a white sheet of paper, upon which innumerable characters were to be impressed through the medium of the senses. The brain of Mrs. C. may be compared to a sheet which, having been written on, is restored to its former whiteness by the spontaneous fading of the ink, or by oxygenated muriatic acid gas. The last question to which she would give any consistent answer, long after she had lost all knowledge of her house, family, condition and every thing, was, What is your name? to which she would reply, in a feeble whisper, *Deborah Hicks*, her maiden name before her marriage.

At present she has no judgment about hunger or thirst, sleeping nor waking, nor, in short, concerning aught relative to her own existence. Her daughters, when they think she requires food, feed her; when they suppose she has been long enough in bed, get her up, dress her, and place her in a chair; and thus she eats and sleeps very regularly. Her concoctive powers seem so good, that, under her present tender treatment, there would seem to be no impediment to the continuance of life, now contracted to mere animal and unconscious existence for a number of years.

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TRADE WINDS.

An experienced seaman has given the following account of the ceasing of the (N. E.) *Trade Wind*, which he has, with much labour, collected from more than two hundred and fifty journals to and from India.

In January, between the sixth and fourth degrees of north latitude. In February, between the fifth and third degrees. In March and April, between the fifth and third degrees. In May, between the sixth and fourth degrees. In June, in the tenth degree. In August and September, between the fourteenth and thirteenth degrees. And during the months of October, November and December, they blow as far as the line.

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INSTANCE OF COPIOUS BLOOD-LETTING.

We have seen a case drawn up by Dr. Orchard Gould, of Branford, in which venesection was performed so frequently and freely as to deplete the body of his patient to the amount

of one hundred and forty-five ounces, between the 8th and 16th of May, 1802. She was a married woman, and had been indisposed for several days with violent pain in the forehead, shooting through to the occiput, thirst, fever, throbbing of the temples, pain in the back of the neck, and vomiting. In the course of the treatment various other evacuating remedies were employed, and the patient recovered.

SOME OPINIONS CONCERNING THE IMMUNITY OF PLAGUE  
FROM CONTAGION.

*Extract of a Letter from Dr. Benjamin Mosely to Dr. Mitchill, dated Chelsea Hospital, Nov. 26, 1803.*

I have just sent into the world a new edition of my work on Tropical Diseases, with many additions, and a new Dissertation on the Influence of the Moon. I herewith send you a copy, and request your acceptance of it. You will find some curious and new matter in my Treatise on the Moon; with many important facts, so obvious that one can scarcely conceive how they should have so long escaped notice. You have a fine field in Fredon to take up the subject.

In respect to contagion in fevers of any kind, I was the first practitioner in the West-Indies, of any country, who denied its existence there, which my early publications show; and as to contagion, and exportation and importation of the plague, if either existed, I should not now have the honour of writing to you.

You will hardly credit me when I inform you that there is a plan set on foot in London for a new institution—"To prevent contagion." *Risum teneatis!* However, I have made many converts among the learned, even here; where scarcely a year elapses without some bug-bear or other alarming the metropolis.

Contagion was unknown to the ancients, who studied nature, and, consequently, thought correctly. It was the nonsense of Fracastorius, and finds reception only in domestic ignorance and opaque policy. In the years 1783, 1785, 1786, and 1787, I visited almost all the lazarettos in Europe, and do know, from my own proper experience, that the plague is not contagious.

I made an attempt, about four years since, to purchase three laden merchant ships from the Levant, which arrived in England, and were condemned as importing the plague. But I could not succeed. They were ordered out to sea, scuttled, and sunk.



## NEW BOTANICAL WORK.

Professor Barton, of Philadelphia, whose publications on a variety of subjects reflect so much honour on his diligence and learning, is now engaged in preparing a large work on the plants of Pennsylvania and some of the adjoining States. A considerable portion of the manuscript, particularly that part which relates to the plants of the first fourteen classes of the Sexual Method, is nearly ready for the press. To render the work more interesting to the lovers and cultivators of Botany, Dr. Barton has engaged Mr. Turpin, a French gentleman, and one of the first delineators of plants now living, to draw and colour the new or more rare indigenous plants of the great tract of country which is to be embraced in this FLORA. Mr. Turpin is now actually engaged in this task in Philadelphia. From the drawings of this gentleman, engravings will be made by some of the first artists in the United States and in Europe. A number of the copies will be coloured, for those who may wish to possess such in preference to the simple engravings. It is proposed to print the work, which will necessarily be an expensive one, by subscription. The first volume will be put to press as soon as the plates shall be engraven. The work will, it is supposed, be printed in a quarto form.

We are persuaded this work will furnish a rich repast to the lovers of Botany, and advance the reputation of the United States in every country where science is cultivated.

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## BARYTES DISCOVERED IN NEW-JERSEY.

New-Jersey has long been famed for its mines of copper and iron. Latterly a quantity of terra ponderosa has been discovered. It is combined with sulphuric acid, and is of a very white colour, and of a laminated structure. This sulphate of barytes is from Sussex County, and the specimen possessed by Dr. Mitchill belongs to the third family of Kirwan's Baroselenite (1 Kir. Min. p. 140). It is of the foliated form, and bears a strong resemblance to the white feldspath of Long-Island. This is the first specimen of American barytes which we have seen or heard of. The finder says there is a large bed or stratum of it.

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## PHILADELPHIA MEDICAL SOCIETY.

At a special meeting of the Philadelphia Medical Society, held on the 1st February, the following gentlemen were duly elected officers for the ensuing year; viz.

BENJAMIN RUSH, M. D. *President.*

CASPER WISTAR, M. D. }

PHILIP SYNG PHYSICK, M. D. } *Vice-Presidents.*

CHARLES CALDWELL, M. D. }

JOHN REDMAN COXE, M. D. } *Corresponding Secretaries.*

SAMUEL DAVIS HEAP, *Recording Secretary.*

JOSEPH HARTSHORN, *Treasurer.*

ISAAC CLEAVER, }

SAMUEL TUCKER, } *Curators.*

JAMES HUTCHINSON, M. D. *Orator.*

#### EULOGIUMS ON DR. PRIESTLEY.

At a stated meeting of the Philadelphia Medical Society, held the 25th February, Charles Caldwell, M. D. &c. was duly elected to deliver an Eulogium on the late illustrious Dr. Joseph Priestley.

We understand that Professor Woodhouse has also been appointed to deliver an Eulogium before the Chemical Society of Philadelphia.

#### DR. BARTON'S PUBLICATION.

Dr. Barton's "Collections for an Essay towards a *Materia Medica* of the United States, Part II." has lately been issued from the press. In our next number a review of it will be presented to our readers.

#### DR. MEASE'S PUBLICATION.

Dr. Mease, of Philadelphia, has completed his American edition of *Willich's Domestic Encyclopædia, or Dictionary of Facts and Useful Knowledge, &c.* in five volumes, with a number of additions applicable to the present situation of the United States. A more particular account of this work will be given in our next number.

#### MEDICAL COMMENCEMENT IN NEW-YORK.

On the first day of May, 1804, the two following gentlemen were admitted to the degree of Doctor of Physic in Columbia College; after having submitted to examination their Inaugural Dissertations on the subjects annexed respectively to their names.

DANIEL D. WALTERS—on Inflammation.

EZEKIEL OSTRANDER—on Puerperal Fever.

## OBITUARY.

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### *Sketches of the late JOSEPH PRIESTLEY, LL. D. &c.*

ON the morning of Monday, February 6, 1804, this venerable man paid the debt of nature, and was buried on the Thursday following, at Northumberland, in Pennsylvania, where he had lived chiefly since his arrival from Britain. He had been affected, as Dr. John S. Mitchell, of Sunbury, observes, with a stricture at the upper orifice of his stomach for some length of time, which rendered it impracticable for him to swallow any solid food. About two months before his death an inflammation of his stomach supervened, which had the effect of relieving the stricture, by discharging, at intervals, a large quantity of slimy matter. A little after this, œdematous swellings took place in his feet and legs; general debility came on; and he gradually became weaker and weaker, until death closed the scene.

Mr. Samuel H. Smith, editor of the *National Intelligencer*, published at the city of Washington, announced this affecting event in the following respectful terms.

“ We have imposed upon us the painful duty of announcing the mournful intelligence of the death of JOSEPH PRIESTLEY, the favourite of science, the advocate of civil and religious liberty, the ornament of the land in which he lived, and the pride of the age from which he received, and on which he reflected glory. As in the life of such a man the world was interested, so nothing short of the tributary regrets of an universe can duly commemorate such departed greatness. For one, the editor of this paper challenges from those who occupy the sphere of its circulation the solemn admiration merited by him whose career of terrestrial glory has drawn to a close without having been tarnished by the minutest reproach. It were vain to attempt, in this necessarily concise notice, to delineate a character so fertile of intellectual powers as that of Priestley. Few of the subjects in which mankind are the most interested escaped the pen of a writer, the philanthropy of whose heart never slept. There was scarcely a department of natural science not improved or enlightened by his research, and the creative power of his genius; and politics and theology, in their widest range, seemed almost too limited for faculties at once patient and profound. His associates in science will seize the



occasion to manifest that, whatever insensibility to merit may sometimes unfortunately attach to the political world, the warmest gratitude invariably embalms the memory of those who have eminently distinguished themselves in the walks of philosophy. To the American Philosophical Society, whose annals are brightened by his labours, we look for the memorial of his greatness."

At a special meeting of the American Philosophical Society, held at their hall the 24th February, Benjamin S. Barton, M. D. was duly elected to deliver an eulogium on the Rev. Dr. Joseph Priestley.

"His principal occupation through life," says one of his friends, "was to propagate the evidences of the truth of Christianity, and the belief of the one true God, as revealed by the divine mission of Jesus Christ.

"As a metaphysician, he stands foremost among those who have attempted the investigation of the abstruse controversies in this department of literature. The question of *liberty and necessity*, imperfectly understood by the ancients, and on which Bradwardine first threw a ray of scholastic light, was hardly understood by Hobbes, and Leibnitz, and Zanchius, and Jackson, and Clarke. Priestley was the first man who introduced into notice the immortal Hartley, and reduced the question itself within the comprehension of common understandings. When to his publications on this subject are added his disquisitions on matter and spirit, he ranks, beyond controversy, as the first metaphysician of the present age.

"As a politician, he has assiduously and successfully laboured, not merely to prepare the minds of his former countrymen of Great-Britain to adopt those gradual and salutary reforms in their own system of government, which the democratic part of it so obviously requires, but to extend and illustrate those general principles of civil liberty which are happily the foundation of the constitution of his adopted country.

"His profound attention to the belles lettres, and to the other departments of general literature, has been successfully exemplified among his other writings, by his lectures on oratory and criticism, and on general history and policy.

"Of the most important and fashionable study of *Pneumatic Chemistry*, he may fairly be said to be the father. His discoveries of the various gases, which *his* writings first announced to the world, exceed not merely in number, but in importance, even those of the illustrious Scheele, of Sweden, and the French Lavoisier.

"He has contributed to make the present generation of readers *think and investigate* beyond any writer of his day. His life is closed. He has lived and died an example of the sublime simplicity of character, which has never been attendant but on the first-rate abilities, uniformly exerted for the benefit of mankind."

Since his illness in Philadelphia, in the year 1801, he never regained his former good state of health. His complaint was constant indigestion, and a difficulty of swallowing food of any kind. But during this period of general debility he was busily employed in printing his Church History, and the first volume of his Notes on the Scriptures, and in making new and original experiments. During this period, likewise, he wrote his pamphlet of Jesus and Socrates compared, and reprinted his Essay on Phlogiston.

From about the beginning of November, 1803, to the middle of January, 1804, his complaint grew more serious; yet, by judicious medical treatment, and strict attention to diet, he, after some time, seemed, if not gaining strength, at least not getting worse; and his friends fondly hoped that his health would continue to improve as the season advanced. He, however, considered his life as very precarious. Even at this time, besides his miscellaneous reading, which was at all times very extensive, he read through all the works quoted in his comparison of the different systems of the Grecian philosophers with Christianity; composed that work, and transcribed the whole of it, in less than three months; so that he has left it ready for the press. During this period he composed, *in one day*, his second Reply to Dr. Linn.

In the last fortnight of January his fits of indigestion became more alarming, his legs swelled, and his weakness increased. Within two days of his death he became so weak that he could walk but a little way, and that with great difficulty; for some time he found himself unable to speak; but on recovering a little, he told his friends that he had never felt more pleasantly during his whole life-time, than during the time he was unable to speak. He was fully sensible that he had not long to live, yet talked with cheerfulness to all who called on him. In the course of the day he expressed his thankfulness at being permitted to die quietly in his family, without pain, and with every convenience and comfort that he could wish for. He dwelt upon the peculiarly happy situation in which it had pleased the Divine Being to place him in life, and the great advantage he had enjoyed in the acquaintance

and friendship of some of the best and wisest of men in the age in which he lived, and the satisfaction he derived from having led an useful as well as happy life. He this day gave directions about printing the remainder of his Notes on Scripture (a work in the completion of which he was much interested), and looked over the first sheet of the third volume, after it was corrected by those who were to attend to its completion, and expressed his satisfaction at the manner of its being executed.

On Sunday, the 5th, he was much weaker, but sat up in an arm chair for a few minutes. He desired that John xi. might be read to him. He stopped the reader at the 45th verse, dwelt for some time on the advantage he had derived from reading the scriptures daily, and recommended this practice, saying, that it would prove a source of the purest pleasure. "We shall all," said he, "meet finally: we only require different degrees of discipline, suited to our different tempers, to prepare us for final happiness." Mr. — coming into his room, he said, "You see, Sir, I am still living." Mr. — observed that he would always live. "Yes, I *believe* I shall; we shall meet again in another and better world." He said this with great animation, laying hold of Mr. —'s hand in both his own. After evening prayers, when his grand-children were brought to his bed-side, he spoke to them separately, and exhorted them to continue to love each other, &c. "I am going," added he, "to sleep as well as you; for death is only a good long sound sleep in the grave; and we shall meet again."

On Monday morning, the 6th of February, on being asked how he did, he answered, in a faint voice, that he had no pain; but appeared fainting away gradually. About eight o'clock he desired to have three pamphlets, which had been looked out by his directions the evening before. *He then dictated, as clearly and distinctly as he had ever done in his life, the additions and alterations which he wished to have made in each.* Mr. — took down the substance of what he said, which was read to him. He observed, "Sir, you have put it in your own language; I wish it to be in *mine*." *He then repeated over again, nearly word for word, what he had before said;* and when it was transcribed, and read over to him, he said, "That is right; I have now done."

About half an hour after he desired that he might be removed to a cot. About ten minutes after he was removed to it he died; but breathed his last so easily, that those who were sitting close to him did not immediately perceive it. He had



put his hand to his face, which prevented them from observing it.

He was born March 24, 1733.

Perhaps no man was ever more conscious of the approach of death than Dr. Priestley, or made more exact arrangements for that solemn event. In one of his letters to Dr. Mitchill, dated January 9, 1802, he expressed himself thus:—"I am at present very much behind-hand in philosophical intelligence, by which I suffer much. In winter also I am not fond of going much into my laboratory, so that I do very little in the way of experiments at present, though in other respects I am not quite idle. I feel, however, the effect of years, and am by no means so active as I have been. Neither have I recovered from the effects of the fever that I had in Philadelphia. I am much weaker and thinner, and this, I fancy, has in some measure been the cause of the *ague* I have had lately, and which I never had before."

His attachment to the administration under Mr. Jefferson was strong and ardent. In another letter to Dr. Mitchill, of January 8, 1803, he has this paragraph:—"I think myself much honoured by the respectful mention of me by your friends in Congress, and could wish to pay them a visit; but at my time of life, the inconvenience of a journey at this season of the year would be too great for me. As to the chaplainship to Congress, I should not think of it. They have my best wishes, and prayers too, without any salary. I rejoice greatly in the present aspect of public affairs, and hope it will be long continued. Our excellent President will, I doubt not, put war and every other evil as far as he can from us."

On the 25th January, a few days before his death, he wrote the following to Dr. Logan:—"By means of various illnesses I am reduced to a state of extreme debility; and if the swelling that began at my feet, which has now reached my knees, should continue to advance as it has done, my continuance here cannot be long. But I have lived a little beyond the usual term of human life, and am content and thankful. Few persons, I believe, have enjoyed life more than I have done.

"Tell Mr. Jefferson that I think myself happy to have lived so long under his excellent administration, and that I have a prospect of dying in it. It is, I am confident, the best on the face of the earth, and yet, I hope, to rise to something more excellent still."

To those who are desirous of tracing the scientific progress

of Dr. Priestley, since his arrival in America, it may be matter of pleasing information to learn, that a very large part of his publications on these subjects are contained either in their original forms, or in review, in the first Hexade of the Medical Repository.



# INDEX

TO THE

## FIRST VOLUME OF THE SECOND HEXADE.

	Page.		Page.
<b>A</b> BORIGINES, or Indians		Atmosphere, metallic, ideas on	233
of Louisiana	396	Ayapana, a powerful alexi-	
Acid contained in hail	94	pharmic	16
Acid, phosphoric, detected in		Barberries not injurious to wheat	297
the manufactories of pot-ash	82	Barking of trees, essay on	42
Acid, prussic, how to procure	314	Barker, Dr. Jeremiah, on dis-	
Acid, septic, in corrupting mat-		tempers in Maine	125
ter	302	Barnewell, Dr. medical and sur-	
Addington, Mr. J. on small-pox		gical facts	280
and cow-pock	313	Barton, Professor B. S. on the	
Agriculture, Massachusetts pa-		natural history of vegetables	48, 156
pers on	39	Barton's new botanical work	427
Agriculture, Massachusetts pre-		Barton's Collections, &c.	428
miums for	40	Bartram, Mr. William, on Ame-	
Agricultural society of the Ba-		rican vines	20
hamas	201	Bartram on the long moss	302
Agricultural society of the Ba-		Barytes discovered in New-	
hamas, premiums by	202	Jersey	427
Air, oxygenous, experiments on		Bear, information on her mode	
procuring	109	of producing young	418, 420
Air, inflammable, dissolves me-		Biot, Mr. on stones falling to	
tals	233	the earth	296, 301
Akerly, Mr. Samuel, his collec-		Binns, Mr. on gypsum in farm-	
tion of New-York shells	198	ing	166
Alden, Mr. T. sketch of Dr.		Blanchet, Dr. F. on the acidity	
Brackett's life	211	of pus	302
Alexander, Dr. Nathaniel, on		Blood-letting beneficial in preg-	
the gold of North-Carolina	307	nancy	240
Alkaline emetics, good effects		Blossoms, their power to with-	
of	127	stand snow	92
Alkaline salts, good in fevers		Boiling of salt, injurious effects	
and venomous bites	129, 304	of	242
Ambergris, history of	417	Botany, works on American	48, 97, 164
American academy of arts and		Boylston, Mr. his medical pre-	
sciences, officers of	96	mium for Harvard college	99
American philosophical society,		Brackett, Dr. Joseph, biogra-	
officers of	208	phy of	211
Anderson, Dr. A. engraves ex-		Bread-fruit trees raised in To-	
cellently in wood	403	bago	97
Aneurism of the aorta	24	Buds of plants, description of	57
Associated actions, examples of	259		



# INDEX.

	Page.		Page.
Caldwell, Dr. C. on the Philadelphia endemic	143	Dorr, J. D. on injuries of the back-bone	260
Carendeſſez, Baron de, on Galvanism	305	Dunghills, noxious septic vapours of	170
Carendeſſez on Galvanic electricity	228	Earthquake at New-York, 1804	416
Cassia chamæcristi, or Accomac pea	306	Earth, theories of	380
Catarrh, connection between it and malignant fever	134	Eckard, Mr. J. F. corrects Dr. Chisholm's mistatement concerning the yellow fever in the island of St. Thomas	336
Catheters with bougie-points, excellence of	36	Education, medical, in the United States, history of	388
Cavern, remarkable, in Ulster county (N. Y.)	303	Electricities, chemical action of the two	102
Chatard, Dr. on fistula lachrymalis	29	Electricity, Galvanic, speculations on	229
Chisholm, Dr. his mistatement corrected	336	Ellicott, Mr. Andrew, his journal	262
Cities poisoned by meats corrupting in British salt	343	Emigration from Britain regulated	309
Classes of plants, annotations on	158	Empire of the United States extended to the Pacific Ocean	406, 421
Cloves naturalized in Cayenne	97	Eulogiums on Dr. Priestley	428
Cochineal insect carried to St. Domingo	292	Eupatorium, or bone-set, history of	12
Collinson, Mr. P. on the locust insect	298	Fanning, Capt. Edmund, discovers islands in the Pacific Ocean	421
Colours distinguishable by touch	4	Feeling, morbid affection of	4
Columbia college, medical graduation in	208, 428	Fermentation destroys contagion, but forms miasma	371
Commissioners of sewers, their antiquity and extraordinary powers	78	Fever, malignant, at Philadelphia, 1803	143
Comstock, Dr. A. C. on tarantismus	1	Fevers, nomenclature of, proposed	362
Conception, inquiry concerning	225	Fevers of Louisiana, domestic origin of	264, 267
Conchology, American, essay towards	198	Fistula lachrymalis, treatment of	28
Contagion, critical remarks on	364	Florida, geological remarks on	265
Cow-pock, comparative view of	314	Florida and Paraguay, histories of	290
Cox's, Mr. Z. view of the Mobile and Mississippi navigation	172	Fœtus, extra-uterine, described	221
Coxe, Dr. J. R. on vaccination	116	Forest trees raised from the seeds	47
Criticisms on certain chemical texts in the bible	61	Fomites, explanation of	371
Dancer, Dr. Thomas, letter to the reviewers	219	Foot, Dr. M. writes on the premature decay of teeth	358
Dancer supports the contagiousness of yellow fever	247	Fracastorius the father of modern contagion	364
Dancing, spasmodic	7	Fracture cured by a seton	122
Decay of teeth in America investigated	360	Friction, beneficial effects of	257
Dick, Dr. E. C. on the Alexandrian yellow fever	190	Fur-trade of Canada, amount of	290
Diseases, pestilential, nomenclature for	364	Gallatin, Mr. Albert, his circular letter to the collectors	216
		Galvanism, practical, epitome of	305
		Geological remarks on Washington city	200

# INDEX.

	Page.		Page.
Geological remarks on eastern Virginia	201	Louisiana, learning and laws of	402
Georgia, singular settlement in	416	Louisiana, report and appropriation for exploring it	409
Germans and Gauls the inventors of soap	80	Louisiana, Upper, various particulars of	410, 411
Gold, native, found in North-Carolina	307	Mackenzie's discoveries in American geography	289
Gonorrhoea, new mode of treating	209	Madison, Mr. James, his letter to Fredish consuls abroad	215
Grapes, native, of Fredonia	21	Mail, safe, quick and cheap conveyance of pamphlets by	175
Grog-shops in the city of New-York	89	Maps, Spanish American	290
Gum-elastic, experiments on	36	Maps of Massachusetts and Maine	ibid
Gypsum, effects of, as a manure	167	Masters of families, advice to	276
Hæmorrhoids, blind, rare case of	339	Mease's edition of the Domestic Encyclopædia	428
Hail contains an acid	94	Measles in the District of Maine	125, 344
Hazeltine, Dr. R. on the measles	344	Medical society of Philadelphia, officers of	427
Health, bill of, for Fredish ships	218	Medicine, progress of, in the United States	383
Highlands, passage of the Hudson through	287	Menonville, Mr. T. his voyage to Guaxaca	291
Hudson's River, its cataracts described	286	Meteoritic stones	296, 300
Hydrophobia, case of dissection	105	Meteors, bright	300
Hysteria, uncommon case of	10	Miasmatic distempers defined	365
Incas, (stone) mirror of	296	Miller, Dr. E. proposes a new nomenclature of febrile and pestilential distempers	362
Indian nations in Louisiana	396	Mines of lead, &c. in the Western country	306
Indies, West, account of their fevers	319	Mineral waters artificially prepared	204
Infants, how to treat	70	Mineralogical facts at Washington	199
Ingalls, Dr. W. on suppurated bursa mucosæ	270	Missouri River, inhabitants near	400
Injections, eulogium on	278	Missouri River, trade up it	410
Intestines liable to dysentery from the use of meats cured with Liverpool salt	244	Missouri River, description of	412
Irritability, conjectures on	238	Mitchill, Dr. finds phosphoric acid in American pot-ash	82
Islands newly discovered in the Pacific Ocean	422	Mitchill observes the local origin of yellow fever in an English ship	88
James, Dr. T. C. describes a case of ruptured womb	325	Mitchill measures the summer temperature of ocean-water at New-York	89
Leaves, reflections on	53	Mitchill finds litmus-paper turned red by the water of melted hail-stones	94
Liverpool salt, its pernicious effects on Fredish beef, pork, &c.	85	Mitchill examines into the destructive effects of employing Liverpool salt to preserve American beef, pork and butter	241
Liverpool salt unfit for packing provisions or butter	243		
Locust, American, or cicada	298		
Lofling's American MSS.	96		
Londonderry, weather and diseases at	332		
Louisiana, official account of	390		
Louisiana, limits and description of	393		
Louisiana, Indians dwelling there	397		

# INDEX.

	Page.		Page.
Mitchill describes Lake George and the falls of the River Hudson	285	Physick lectures on surgery	102
Mitchill makes a report to Congress in favour of exploring Louisiana	406	Pike, Major, his information about Upper Louisiana	409
Mitchill ascertains the temperature of spring-water at New-York to be 54 deg.	414	Plague of Syria not contagious	77, 197
Mosely's opinion on plague	426	Plague, its relation to yellow fever and typhus	365
Moss, long, of Carolina	302	Plague of Syria, Dr. Wittman's account of	206
Mountain of salt in Louisiana	395	Plague, correction of prejudices on	77
Navigation, inland, interesting view of	172	Plague of the West-Indies, historical documents concerning	318
Nervous disease, odd case of	1	Plague, its immunity from contagion	426
New-York city, taverns and brothels in	89	Plants, comments on the sexual classes of	160
New-York state, description of some parts of	285	Poplar, Lombardy	95
New-York hospital, account of	293	Portsmouth, bill of mortality for	308
Nosology, attempt to reform	363	Post-office establishment	174
Nuisances, how removable by commissioners of sewers	79	Pot-ash, phosphate of	83
Ocean, Atlantic, drifts and currents in	293	Pot-ash obtained from buck-wheat	314
Old age	424	Pot-ash good for venomous bites	304
Oxen of large size	423	Pot-ash, estimate of the consumption of wood to form it	305
Oxygenous gas, how to get pure	109	Pregnancy occasionally relieved by venesection	239
Ozas, or Osages, and other natives of Louisiana	398, 410	Priestley, Dr. death and biographical sketch of	429
Pascalis, Dr. F. on intestinal worms	342	Pringle, Sir John, anecdote of	246
Passengers to America, means adopted by the imperial parliament to guard them against home-bred pestilence	310	Pyrexia, critical discussion on	368
Patterson, Dr. W. on the diseases, &c. of Londonderry	331	Quadrupeds, general history of	403
Peale, Mr. C. W. on the prolongation of life	273	Quarantine, rigours of, to lessen	215
Pennsylvania university, medical graduation in	100	Quarry of slate at New-Paltz	295
Percival, Dr. T. on the septic tendency of English salt	246	Questions, prize, for Boylston's premium	99
Pestilence engendered on board a British ship in New-York harbour	86	Questions, prize, of Maryland society	207
Pestilential diseases in the United States for 1803	177	Ramsay, Dr. D. his observations on conception	225
Pestilential diseases not contagious, but miasmatic	365	Reflections on fistula lachrymalis	31
Physick, Dr. P. S. on setons in aiding the cure of fractures	122	Review of the Massachusetts papers on agriculture	39
Physick on the construction and use of bougies	35	Review of Barton's elements of botany	48, 156
		Review of the town and country friend and physician	64
		Review of Binns's treatise on practical farming	166
		Review of Coxe's estimate of commercial advantages, by way of the Mississippi and Mobile rivers, to the western country	172



# INDEX.

	Page.		Page.
Review of Grainger's list of the post-offices in the United States	174	exhalations from beef, &c. packed with Liverpool salt	244
Review of Ellicott's journal down the Mississippi, &c.	262	Skin, functions of	256
Review of Ingalls's dissertation on bursal abscess	270	Small-pox, comparative view of	313
Review of Peale's epistle on the means of preserving health	273	Smith, Rev. John, on the productions of Louisiana	411
Review of Barnwell's physical investigations, &c. (concluded)	280	Soap, economical history of	80
Review of the pocket conspectus of the London and Edinburgh pharmacopoeias	284	Soda, sulphate of, to prepare	211
Review of the Rev. Mr. Miller's retrospect of the 18th century	373	Soda, phosphate of, to make	ibid
Review of Mr. Jefferson's account of Louisiana	390	Spalding, Dr. L. his account of diseases at Portsmouth	308
Review of Anderson's edition of Bewick's general history of quadrupeds	403	Spine, injury of	258
River of salt-water in Louisiana	408,	Spirit of turpentine, use of, to prepare bougies	37
Robinia, cultivation of, in France	135	Spirits, distilled, consumption of	90
Roots, observations on	51	Spring of 1803, remarkable phenomena of	91
Rush, Professor B. relates a case of hydrophobia	105	Spring-water, temperature of, near New-York	415
Rust on iron, to prevent	314	Stevens, Mr. J. on the bone-set	12
Salt, alkaline, its salutary operation in fevers	129	Stings of wasps, how to treat	210
Salt, alkaline, in the bite of serpents	304	Stones fallen to the earth	296, 301
Salt, sea, or common, abstract of the trade of the United States in it	83	Sugar cultivated in New-Orleans	402
Salt, sea, or common, ought to be purified for use	246	Tarantula, supposed bite of	1
Salt-works of the Rev. Mr. Alden at Portsmouth	418	Temperature, mean, of New-York	415
Salvador, St. (island), a drift or current setting toward it	294	Timber, its strength to increase	45
Science during the 18th century, account of	375	Tipula, or wheat insect	97
Sensations strangely disordered	8	Trabuc, Mr. his medical journal	206
Servant, Dr. V. A. prepares artificial mineral waters	204	Trade, foreign, in salt	84
Sewers, extract of the laws of England relative to them	78	Trade-winds	423
Sewers, commissioners of, their powers	79	Tragacanth, gum, frauds in selling	293
Shells of New-York enumerated	198	Trees, how damaged by the cicada	299
Ships for passengers, British law about	309	Teeth, premature decay of	358
Ships rendered sickly by septic		Typhus not a contagious, but a miasmatic disease	365
		Vaccination, observations on	114
		Vaughan, Dr. J. on venesection in pregnancy	239
		Vejuco da guaco, a valuable antidote	13
		Vegetable classes, critical remarks on	159
		Venesection, cepious	425
		Vines of North-America	19
		Voltaic pile substituted for electrical machinery	231
		Uncontagiousness of yellow fever	154
		Urine, suppression of	35
		Uterus, rupture of	325
		Wall, subterranean, on the Yadkin	26

# INDEX.

	Page.		Page.
Warden, Rev. Mr. on diseases at Kingston	296	Woodhouse discovers caoutchouc in milky plants	203
Weather at Esopus	295	Worms, singular case of	342
Weather at Londonderry	332	Yellow fever at Philadelphia, 1803, indigenous, and not imported	150
Weather in York (Maine)	346	Yellow fever at New-York	178
Webster, Mr. Noah, his observations on the theory and nature of fever	134, 255	Yellow fever at New-York not imported nor contagious	185
Webster on the origin of pestilential distempers	316	Yellow fever at Philadelphia	186
Whale, pike-headed	416	Yellow fever at Alexandria	190
Wheat not injured by the barberry	296	Yellow fever, blood-letting in	193
White, Dr. J. E. on aneurism	25	Yellow fever excited by the septic exhalations of beef put up with Liverpool salt	243
Willow, weeping, Babylonian	95	Yellow fever, attempt to prove it contagious	247
Wilson, Col. facts on the plague	77, 194	Yellow fever, historical evidence of	319
Wood mineralized	199	Yellow fever at St. Thomas's misrepresented by Dr. Chisholm	337
Wood turned partly, by burning, to pot-ash	305	Yellow fever, its relation to plague and typhus	365
Woodhouse, Professor J. his additional remarks on the balsates of Carolina	27	Zoology, exhortation to the study of	403
Woodhouse makes experiments on procuring pure oxygenous gas	112		

END OF VOL. I.

July 22 1872

